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11 NORTHAMPTON SQUARE.

SIGHTS IN ALL SEASONS.

“ ————— One spirit—His,
Who wore the platted thorns with bleeding brows,
Rules universal nature.
His presence, who made all so fair, perceiv'd
Makes all still fairer. As with him no scene
Is dreary, so with him all seasons please.”

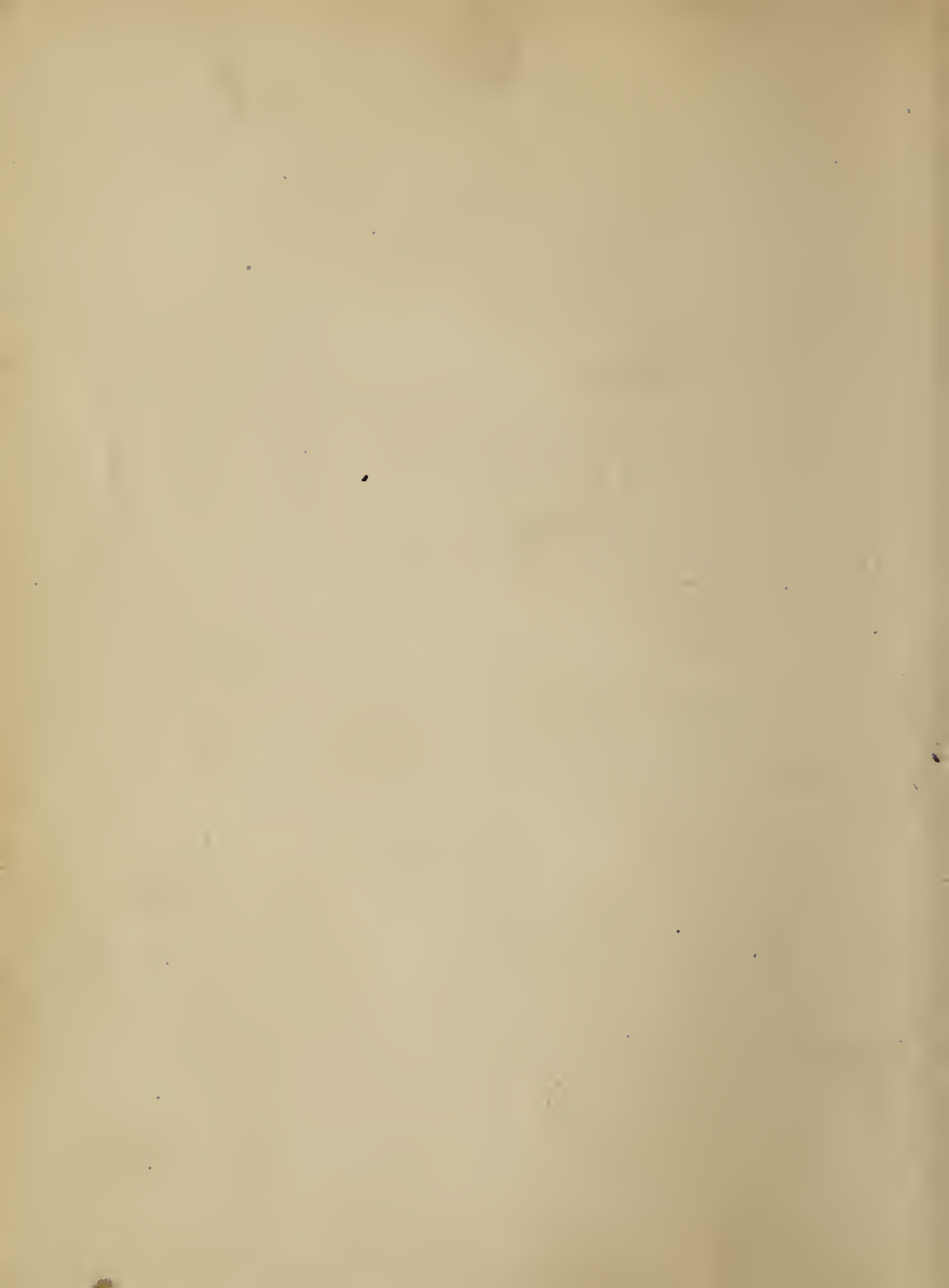
COWPER.

LONDON:
THE RELIGIOUS TRACT SOCIETY,
56, PATERNOSTER ROW, AND 65, ST. PAUL'S CHURCHYARD;
AND SOLD BY THE BOOKSELLERS.

CONTENTS.



	PAGE
SIGHTS IN SPRING	1
SIGHTS IN SUMMER	93
SIGHTS IN AUTUMN	189
SIGHTS IN WINTER	285



Sights in Spring.

SIGHTS IN SPRING



THE RELIGIOUS TRACT SOCIETY,

56, PATERNOSTER ROW, AND 65, ST. PAUL'S CHURCHYARD;
AND SOLD BY THE BOOKSELLERS

SIGHTS IN SPRING.



SEEING AND OBSERVING.

How many have been delighted with the story, called "Eyes and no Eyes ; or, The Art of Seeing." One young person, on a holiday afternoon, went to Broom Heath, and round by the wind-mill on Camp Mount, and home through the meadows by the river side ; and he thought the walk very dull, and would rather by half have gone along the turnpike-road. But another found the same walk truly pleasant, for he

SIGHTS IN SPRING.

had observed the mistletoe growing out of the old tree, and the birds, and the gay flowers of the heath, and brought home with him a variety of interesting objects, about which he obtained much valuable knowledge. And a similar contrast is often seen. How much do they lose who refuse to use their eyes ; how much do they gain who have learned how to observe !

Yes ! it may be said, emphatically, *learned* to observe ; for without effort and practice but little will be acquired. Give to one person a telescope, and tell him to look at a double star in the heavens, and he will fail to perceive it ; but give another the same instrument, and both objects shall be distinctly observed. And why ? The one has been used to the effort, the other has not been. Of this we may take another instance. An acute writer tells us that he was, on one occasion, with some men of science, when a bottle was produced, which was said to contain certain small living creatures. It was first handed to the more eminent in such matters on the foremost benches, who talked freely with one another on the forms of the animals ; but when it came

to those behind, they could discover nothing in the bottle but a clear fluid, without any trace of animals, dead or alive. The surprise of the ignorant, at seeing nothing, was only equal to that of the learned who saw much to admire. And it was not until the unskilled were told what it was they were to look for, and the shape, size, and general appearance of the living creatures, that their minds began to unite with their eyes in "peopling the fluid," which up to that time appeared without a single inhabitant. The wonder then was, how they could possibly have failed to see objects now so plainly visible.

Of these things the writer has been reminded, as he set about preparing this book. If its contents were to be summed up in a few words, it would be in these, "Look about you!" But perhaps many a pair of youthful eyes would then be in difficulty, and the question might arise, "At what shall I look?" Hence some objects, specially deserving notice, shall now be pointed out, and these may direct to others, which, like them, may excite and reward attention.

SIGHTS IN SPRING.

Do you ask of what kind will they be? I answer
with our poet Cowper :—

“ I admire,
None more admires the painter’s magic skill,
Who shows me that which I shall never see,
Conveys a distant country into mine,
And throws Italian light on English walls.
But imitative strokes can do no more
Than please the eye, sweet Nature every sense.
The air salubrious of her lofty hills,
The cheering fragrance of her dewy vales,
And music of her woods—no work of man
Can rival these : these all bespeak a power
Peculiar, and exclusively her own.”

And what says the psalmist?—

“ The works of the Lord are great,
Sought out of all them that have pleasure therein.”

PSA. cxi. 2.



MARCH.



M A R C H.

“ The stormy March is come at last,
With wind and cloud and changing skies,
I hear the rushing of the blast,
That through the snowy valley flies.

“ Ah, passing few are they who speak,
Wild, stormy month! in praise of thee;
Yet, though thy winds are loud and bleak,
Thou art a welcome month to me.

“ For thou to northern lands again,
The glad and glorious sun dost bring;
And thou hast join'd the gentle train,
And wear'st the gentle name of Spring.

“ And in thy reign of blast and storm,
Smiles many a long, bright, sunny day:
When the changing winds are soft and warm,
And heaven puts on the blue of May.

“ Thou bring'st the hope of those calm skies,
And that soft time of sunny showers;
When the wide bloom, on earth that lies,
Seems of a brighter world than ours.”

BRYANT.

FICKLENESS is said to be the chief feature of the month of March. It often storms, smiles, snows, hails, shines, and rains, all in one day. But it may certainly

SIGHTS IN SPRING.

be known from its north-east winds, which always prevail, sooner or later, in some part or other. Often are they felt more severely than the cold of mid-winter, yet they are of great utility. As Thomson says—

“ These cruel-seeming winds
Blow not in vain. For hence they keep repress'd
These deepening clouds on clouds, surcharg'd with rain,
That o'er the vast Atlantic hither borne,
In endless train, would quench the summer blaze,
And, cheerless, drown the crude unripen'd year.”

At length, however, the whistling of the air, its rushing, and those gusts which are by no means unusual, pause for a time. The winds seem to have done their work; and if rains come, they do not so saturate the ground as to prevent the sun drying it quickly. The change in this respect is often surprising. Were the heavy rains of the preceding month continued throughout the present, the seeds committed to the earth, and already germinating, would perish, and the industry of man be frustrated. March is sometimes called a trying month in our climate, but on it greatly depends the fulness of summer, and the riches of autumn. How wisely and benevolently are all things ordered! He who “tempers the wind to the shorn lamb,” controls the power of the elements, for the welfare of his creatures.

BUDDING OF TREES.

Thus it often happens, that the paths which yesterday were so miry that we thought more of the trouble than the pleasure of a walk, are quite firm. The air alone, without the sun, has dried the ground, and "a bushel of March dust," says an old proverb, "is worth a monarch's ransom." Now the young and the healthy bound gaily along; and well they may, for the first tokens of spring now cheer them, and are increasing in beauty from day to day.

When the sky is clear, and the sun enlivening, when the fields are beginning to be green, and the warblers of the woods pour forth their songs, when the buds are swelling in the hedges, and all nature appears fresh and gay, it is truly delightful to walk forth in the open air. In such a season may the eye see and the heart feel that God is everywhere scattering around most plenteously his blessings. Let us then leave our dwellings, and mark some of the various objects that demand attention.

Early in the year the buds on the trees are worthy of notice. The little conical projections from the stem, which are at first of an uniform substance, but which are eventually covered by minute scales, very regularly and closely arranged one over the other, produce the branches of a plant. Without these, no

increase in bulk could take place, except an expansion in all directions, as it is with the plants of the lowest class, called fungi. How valuable then are these minute scales !

These little projections are called leaf-buds. Usually they grow singly ; but in some plants, as in the peach-tree, they appear in greater numbers. It is well worth while to watch their progress from time to time ; and insensible must be the mind that is not filled with wonder and admiration, as these little products of the Divine hand are contemplated. Beneath their scales these leaf-buds form a number of rudimentary leaves, ready to unfold and rapidly to increase in size, as soon as the branch is called into action. Most curiously are these minute leaves packed up within the bud, so as to occupy the smallest possible space. And equally wonderful is it that the particular mode of folding, peculiar to a given species, may be observed in every bud of every individual tree. In the very smallest parts there is no uncertainty or confusion, nothing is left unsettled, but every plant is so ordered by the wisdom of God, that the manner in which these leaves are folded up has been adopted for purposes of arrangement among men of science.

Leaf-buds generally lengthen out into branches, but

sometimes if any thing tends to interrupt or stunt their growth, they exchange their power of lengthening for that of hardening and sharpening at the point. Thus they become spines or thorns. This may be seen in the common hawthorn, in which the branches will be found in all their different stages of alteration into spines.

As the season advances, the buds burst open. Buds produce not only leaves, but flowers. Hence a distinction is made between leaf-buds and flower-buds. Leaf-buds are always larger and more slender than those which yield flowers. This may be seen by observing the little roundish bud on the apple tree, containing the beautiful pink blossom, and comparing it with the bud which is to yield a shoot bearing leaves. Some buds, like those on the lilac tree, yield both flowers and leaves.

And now, look around! Vegetation is advancing. The common elder and gooseberry are putting forth their leaves. Every spray teems with the buds of the purplish brown tint which overspreads the elm on the eve of unfolding its foliage. Only let the eye dwell on even a small space on the first verdant ditch-bank in spring, and marvellous indeed will the diversity of the leaves appear.

SIGHTS IN SPRING.



LEAVES OF FOREST TREES.

- | | | |
|-------------|--------------------|------------|
| 1 Oak. | 4. White Maple. | 7. Willow. |
| 2. Elm. | 5. Birch. | 8. Beech. |
| 3. Walnut. | 6. White Lime. | 9. Ash. |
| 10. Poplar. | 11. Horse Chestnut | |

Nor let it be supposed that leaves are formed for ornament alone. They are to plants as lungs are to

SPRING FLOWERS.

animals. Tear them off, and death comes, as it does when the lungs are destroyed. On the contrary, if the air be warm, and the sun shines on the leaves, an important change passes on the sap, which returns to nourish the branches, stem, and root, and other parts of the plant; in the same way as the blood passes from the lungs to the heart, to be sent to all parts of the body.

In the Spring, the herbage under trees is generally more vivid and luxuriant than that which is beyond the spread of the branches. In some instances this may be owing to cattle having harboured there, and the ground consequently becoming more manured. But the herbage will be found rich and verdant in other circumstances; a very intelligent writer, therefore, traces it chiefly to the effects of the driving fogs and mists. These cause a frequent drip beneath the trees, and thus the soil is constantly refreshed. At the same time, the decomposition of the foliage is promoted, and this being drawn into the earth by worms, contributes to the verdure by the nutriment yielded.

Other objects of the vegetable world, such as the vernal crocus, claim our notice. The snow-drop too is a native plant, flowering from January till April, according to the soil and situation. In a wild state it

grows in woods and on banks, covering large patches of ground, to the exclusion of every other plant. And see! There is something well worth looking at.

It is a wall-wasp, one of the solitary species, of a dark, glossy black colour, crossed with narrow bands of a pale golden yellow, on a snow-drop blossom. It is very sluggish and languid, benumbed doubtless by the cold it has endured, though partially revived by the sunshine which is streaming over the opening blossoms of that clump of plants.

Now, may it not be that their early blow-

ing, as well as the late blowing of the ivy and some others, is designed to spread a table in the wintry wilderness? Some insects, like this poor little creature,



THE SNOW-DROP AND WALL-WASPS.

THE VIOLET.

having survived the general destruction of their kindred, on the first setting in of cold weather, or such as the hive-bees as may be roused from their torpid sleep by milder weather than usual, may here find a repast. Is it not pleasing to think that the snow-drop, and a few of its flowering companions, may then be the means of rescuing some from absolute famine? Surely this should throw a brighter interest round the early flowers than they derive from many a poet's song.

There is one of which much has been said and sung :—

“ Just to say the Spring is come,
The violet peeps from her woodland home.”

This is one of the flowers which we may rejoice in thinking others enjoy as well as ourselves. It lives on the Alpine mountains,—cheers the Norwegian amidst the bleakness of his clime,—blossoms beneath the lofty palm of Africa,—adorns the isles of the Mediterranean, and calls forth the admiration of the natives of China. Appearing in all its beauty and fragrance in our own land, can we be surprised at such a tribute as this?

“ Thou shalt be mine, thou simplest flower,
Tenting thyself beneath the bower
Thy little leaves have made;
So meekly shrinking from the eye,
Yet mark'd by every passer by,
Of thine own sweets betray'd.

SIGHTS IN SPRING.

“ The rose may boast a brighter hue,
May yield as rich a fragrance too,
Yet let her yield to thee ;
Not hers thy modesty of dress,
Nor hers thy witching artlessness,
And these are more to me.”

But in the violet, lovely as it is, we must not be wholly absorbed. How brightly do the blossoms of the colt's-foot spangle that mound of clay ! Wherever clay is dug up, and left in heaps, it becomes covered by this plant. Surely, then, it must contain the seeds of the colt's-foot, deposited at the same time with it, and requiring only the sun and air to germinate.

But here let us pause for a moment. Suppose we had never seen a flower, and as we walked along some green stalks caught the eye, and we wondered what they could be, and that we visited the spot with renewed interest from day to day. How should we feel as we saw the first side-stem bearing off from the main one, or putting forth a leaf ? Then the leaf gradually unfolding itself ; then another ; then another ; and then the main stalk rising and producing more ? What a charming and surprising novelty would then appear, — a bud gradually unveiling its beauty, and exciting in the bosom a new delight. Suppose, however, that just before our next visit the flower had burst forth in

all its beauty and fragrance, what would be our feelings as we gazed on it and inhaled its perfume? We cannot tell. And yet this process is not less wonderful because it has become familiar; nor does the flower speak less distinctly of the Hand that fashioned and adorned it, though we allow ourselves to be too busy with trifles to listen to its voice.

How genial is the influence which is now abroad! It is at once simple, and most effective. The earth and the air, having become warmer, give a new impulse to the plants, to wake them, as it were, from the slumbers of colder times. The sun, which has been shining upon us aslant, and therefore feebly, now rising over our heads, and darting his rays more directly upon us, causes this return of warmer temperature. And now, according to their structures, plants unfold with greater or less rapidity. Hence, the delightful appearances of spring.

The more we dwell on this power, the more we shall be struck by it. Is it not usual for fluids to descend through tubes? Let water be poured from any vessel into one, and it will fall, as all are aware. But now the sap rises from the root, and flows through the hair-like vessels, which fill the branches, leaves, and flowers. Yes! The sap *rises*, not merely to the

height of a few inches, but to that of twenty, fifty, and even more than a hundred feet ! Go and ask some philosopher why is this ? And he will talk to you about hair-like tubes attracting liquids, and thus causing them to rise ; but, after all, the wisest among us have much on this, as well as every other subject, to learn.

Heat is doubtless most active and powerful in this change ; but suppose, instead of coming gradually, it put forth its energy at once. Think of what would happen were we visited first with the summer sun instead of that of spring. The sap would rush violently through the tender vessels of plants, and many would, in consequence, be totally destroyed. The leaf and the flower would instantly burst forth where the shock could be sustained, only to wither and perish. Where would then be the fruits of the earth ? See then how much we are indebted to that order of things which God has established.

Now let us look to animated nature. “A bee among the flowers, in spring,” says Paley, “is one of the cheerfulest objects that can be looked upon. Its life appears to be all enjoyment, so busy and so pleased.” Other insects are also in motion. The brimstone butterfly, which might have been observed before, appears

BUTTERFLIES.

now in greater numbers. And there, too, is a peacock butterfly! How beautiful are its colours! The



PEACOCK BUTTERFLY AND CHRYSALISES,

speckled wood, the red admiral, and the tortoiseshell butterflies, are also fluttering in the air. Let not

SIGHTS IN SPRING.

these, then, pass without our notice. Rather may we say :—

“ We wonder at a thousand insect forms,
These hatched, and those resuscitated worms,
New life ordain'd, and brighter scenes to share,
Once prone on earth, now buoyant upon air.”

The wings of the bee are very beautiful. They are four in number, smooth and glossy, and consist of a fine, delicate, transparent membrane, traversed by fibres, which act as a sort of framework, giving to the wings all the firmness and strength they require. Bring out the microscope—that marvellous instrument for showing a little world in a drop of water, and a wonder worthy of God in the smallest object—and those fibres will repay observation. They are little tubes, and contain air ; and it is thought that the insect can at pleasure direct air into these tubes so as to expand them to the utmost. Thus they become more tense, and more fully stretch the membrane which they support. Birds, as is well known, have the bones of the wings hollow, and connected with the lungs, from which they are filled with air ; and it is probable that there is a great likeness between the wings of insects and of birds.

The wing of the butterfly, like that of the bee, has fibres supporting a membrane, but this is wonderfully

SCALES ON THE WINGS OF INSECTS.

covered with very small downy scales. It is the same with moths. Nor are those scales all alike. On the contrary, six large engravings of what is called a quarto volume, are filled with representations of the different forms of the scales with which the wing of an insect is arrayed. Seen through a powerful glass, these scales have a body, and a little root; they overlap each other like the tiles of a house, and are disposed with great regularity. Their closeness and minuteness give an appearance to the wing of being powdered. When touched, some of them come off on the finger, and they may all be easily removed, leaving the membrane clear and transparent. To count the number of these scales is almost impossible. In each of the small wings of the silk moth, no fewer than 200,000 of them have been reckoned. In several instances, these scales have many beautiful and regular lines upon them. These are very fine, and are again crossed by others still finer. As the light falls upon them, its rays produce the changeful and brilliant tints by which the scales are adorned. So true are the lines,

“ In down of every variegated dye
Shines fluttering soft, the radiant butterfly :
That powder which thy spoiling hand disdains,
The form of quills and painted plumes contains ;
Not courts can more magnificence express
In all their blaze of gems, and pomp of dress.”

SIGHTS IN SPRING.

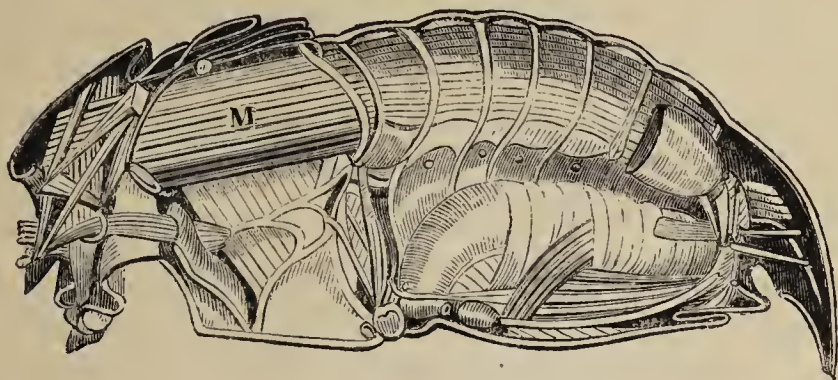
Very different is the flight of the bee from that of the butterfly. In the one, the movements are steady and rapid ; in the other, zig-zag, irregular, and seemingly capricious. It has been observed, that insects with scale-covered wings, are less steady and rapid in their flight than such as have wings of simple membrane and without clothing.

Of the strength of the muscles, by which the fan-like wings of insects are worked, it is difficult to conceive. Count, if you can, the vibrations of the wing of a bee or a gnat ? Even the common fly will play round the most rapid steam-carriage at full speed. Not only does it move onwards with the same rapidity as the train, but it does so wheeling round in circles of greater or less extent, thus traversing a far greater extent than if it kept only a direct course.

Insects excel birds in their powers of flight, at least by comparison ; and their strength is proportionately superior to that either of birds or quadrupeds. Ants, for example, will carry loads from thirty to forty times heavier than their own bodies. The strength of the common chafer-beetle has been computed, in proportion to its bulk, to be six times greater than that of the horse. Had the elephant the same proportionate strength as the stag-beetle is capable of

MUSCULAR POWER OF INSECTS.

exerting, he would be able to tear up trees by the roots,



MUSCLES OF THE COCKCHAFER

and hurl huge rocks against his assailants. Well then might Cowper say :—

“Their power would make them, had they bulk and size,
More hideous foes than fancy can devise ;
With helmet heads, and dragon-scales adorn’d,
The mighty, myriads, now securely scorn’d,
Would mock the majesty of man’s high birth,
Despise his bulwarks, and unpeople earth.”

As the months grow milder, the creatures of earth, as well as air, are multiplied. The sleepy dormouse awakes, the torpid toad begins to crawl, and the viper uncoils his long length. Ah ! there is a snake. It is worth observation. How elegant are

its tortuous movements as it traverses the sunny bank ! It has seen the passer-by, and fled with its utmost speed. It appears earlier or later, according to the warmth or coldness of the weather. The snake is the largest of the British reptiles, and is strong, active, and graceful in its motions. It is not venomous, for it has not the poison-fangs with which the viper is armed, and which justly render many species in more southern regions objects of terror. It is fond of sheltered situations and warm meadows, in the vicinity of water. To this it frequently betakes itself, probably in quest of prey, swimming with the greatest ease, and able to remain a considerable time beneath. Strings of its eggs, with their parchment-like covering, may often be seen. Melon pits, hot-beds, mounds of manure, and the interstices on the sides of lime-kilns, are favourite places for the resort of the common snake. A limekiln in Staffordshire, in almost continual use, having its sloping sides composed of heavy stonework and earth, abounded with these animals. Their eggs were to be obtained in almost every crevice. During the summer, the adjacent meadows were tenanted by these animals; but as the cold weather came on, they drew to the sides of the kiln, and in the crevices, and beneath the turf and stonework, took up

their winter quarters. Their eggs are also often found in cucumber beds, and heaps of stable manure. Frogs, toads, lizards, snails, the eggs of small birds and nestling birds, together with mice, and even young rats, are the food of the snake. The strength of this reptile is much greater than might be supposed from its form, nor is its courage less when opposed to natural enemies.

Strange as it may seem, the snake is easily rendered tame and familiar. One was kept for the space of eleven years by a gentleman, to whom it showed much attachment. A lady of somewhat eccentric habits, too, domesticated a host of snakes as pets. They knew her well; would come when called, and wreathed themselves round her arms and neck. Nor did they confine their attentions to their benefactress. They would play the same gambols, for such they were, round the arms and necks of visitors, to their amazement, and even terror.

Another reptile which now re-appears is the blind-worm, or slow-worm. It is gentle, inoffensive, and very timid. Its general colour is light brown, having a gloss of silvery gray, and with a line of dark or blackish dots along the back, while several lines of a similar colour are carried along the sides. Sometimes, however, these markings are wanting. The head is small and blunt; the eyes are small but brilliant,

SIGHTS IN SPRING.

having true eyelids, and the teeth are minute. When apprehensive of injury, it contracts its muscles, so as to render itself stiff, and at the same time so brittle, that it may be snapped in two by the slightest blow, or even an attempt to bend it. It seldom exceeds twelve or fourteen inches in length. Insects, slugs, and earth-worms are its food.

A gentleman kept alive a blind-worm for nine weeks. When touched, it would turn and bite, but not very sharply. It fed on the little white slug, so common in fields and gardens; but it did not eat every day. It drank sparingly of milk, raising its head while it did so. It was a remarkably fine one, measuring fifteen inches in length. It cast its slough while thus kept, the skin coming off in different pieces. When at liberty, however, the slough of this species, as is the case with the common snake, is thrown off entire, and turned inside out, like the skin stripped off an eel, or the inverted finger of a glove.

And now look above; there are life and activity in a very different form.

“The pretty red squirrel lives up in a tree,
A little blithe creature as ever can be :
He dwells in the boughs where the stock-dove broods,
Far in the shades of the green summer woods;
His food is the young juicy cone of the pine,
And the milky beech nut is his milk and his wine ;

THE SQUIRREL.

In the joy of his nature he frisks with a bound
To the topmost twigs, and then down to the ground ;
Then up again, like a winged thing,
And from tree to tree with a vaulting spring ;
Then he sits up aloft, and looks waggish and queer,
As if he would say, ' Ay, follow me here ! '
And then he grows frettish, and stamps his foot,
And then independently cracks his nut."

How gaily that little creature leaps from branch to branch ! See now the hares hopping about on the green-sward, if all be still ; but only let them catch a gentle sound, and, in a moment, they are gone.

The birds that visit us in winter have departed, for the wide regions of the north, yet a few of our summer birds of passage have arrived. The first is the small uncrested wren. Though minute, it emits its two sharp notes so earnestly, as to make the woods echo. The wheat-ear may also be observed flitting about on the common lands and open pasture-grounds, remarkable for the pure white of the lower part of the back, in contrast with the bluish-grey of the rest of the upper parts, and the fawn colour of the chest. Quick, restless, and uncertain are its movements as it flits from turf to turf, or from stone to stone ; and how nimbly it runs along the ground ! On its first arrival it is very fat, and is prized as a delicacy for the table.

And there is another bird worth looking at, as it rises from among the rushes. It is a snipe. Its first movements are irregular and zig-zag, it then suddenly mounts aloft, and its descent is abrupt. This well-known bird dwells on our island, changing its situation from spot to spot, as the weather may render it necessary. During the autumn and winter, snipes, scattered over the low lands, frequent marshes, bogs, and rushy-grounds, which they forsake when the ground is covered with snow, or the frost is severe. Then they repair to the fountain-heads of rivulets, and to springs whose temperature preserves them from being bound by the ice. As the spring sets in about March, earlier or later, according to the weather, they mostly retire to the more elevated moorland tracts, and prepare for nest-building. A few, however, remain to breed on the marshes or fenny lands of the lower and more southern parts of the island.

The piping call of the male bird, always uttered on the wing, may now be heard. At times this sound is accompanied by a humming noise, supposed to be produced by a peculiar action of the wings. Whenever it occurs, the snipe descends with great velocity, and a trembling motion of the pinions. In winter the number of our native snipes is increased from

Norway, and other high regions of the continent. These often appear in great flights on our coasts, whence they disperse themselves over the more inland counties.

The woodcock, which only tarries here occasionally to breed, departs in March for the higher latitudes of Sweden and Norway. There these birds are very abundant, and their eggs are collected in thousands as a delicacy for the table. The ravages thus made among them, are supposed to account for their visiting us in smaller numbers than formerly.

In the structure of the two birds just mentioned, we have a beautiful display of Divine wisdom and goodness. Each of their bills has a tissue of nerves distributed over it, and particularly at its extremity, which is covered with a soft pulpy skin or substance, in which these nervous fibres are found in vast numbers. How sensitive, therefore, is the bill ! It is also provided with certain muscles, which expand the tips of both jaws in such a manner as to enable them, when inserted into the soft mud, to lay hold of the worm or insect which they feel, and draw it forth. Thus the snipe and the woodcock are able to feel the prey they cannot see, to detect it among the various things which the mud contains, and fully to secure it.

SIGHTS IN SPRING.

In the course of March, the lapwing, or pewit, returns in small flocks to the moorland tracts, in order to breed. The pairing season with them has already commenced.



THE LAPWING, OR PEWIT

During this period, their flight, particularly that of the males, is peculiar. It includes a variety of movements, in the course of which they dart upwards,

BIRDS OF SPRING.

sweep round, descend, and whirl rapidly about, their wings being so strongly and quickly agitated as to produce a whistling or hissing noise.

About the same time, our native birds, the red grouse, breed on the heath-covered hills and moors. The nest, if it deserve the name, consists of a few withered stems of heath or grass, placed as a lining in a shallow cavity of the ground on the heath. On this, eight, ten, or twelve eggs of a greyish white, and blotched with brown, are laid. The brood, when hatched, are taken under the care of both parents.

The wild duck pairs in March. The male and female continue together till the latter begins the task of incubation, when she is left to herself. The male deserting her, joins others of his own sex, and these form flocks by themselves. The care of the young is undertaken by the female alone.

The wild pigeon coos in the woods. Domestic poultry lay eggs and sit. With what joy does the hen announce that an egg has been laid ! Nor does she exult alone ; others join in the shout, and it sometimes extends from one homestead to another, as if something very extraordinary had occurred.

Now the pastures are enlivened by lambs. When the wind is still, and the weather warm and sunny,

SIGHTS IN SPRING.

you may see them chasing one another in sporting gambols. Bloomfield has well described their pranks :—

“ A few begin a short but vigorous race,
And indolence, abashed, soon flies the place :
Thus challenged forth, see hither, one by one
From every side assembling playmates run ;
A thousand wily antics mark their stay,
A starting crowd impatient of delay.
Like the fond dove from fearful prison freed,
Each seems to say, ‘ Come, let us try our speed :’
Away they scour, impetuous, ardent, strong,
The green turf trembling as they bound along ;
Adown the slope, then up the hillock climb,
Where every molchill is a bed of thyme :
There panting stop, yet scarcely can refrain,
A bird, a leaf, will set them off again.
Or, if a gale, with strength unusual, blow,
Scattering the wild-brier roses into snow,
Their little limbs increasing efforts try,
Like the torn flower the fair assemblage fly.
Ah, fallen rose ! sad emblem of their doom ;
Frail as thyself, they perish while they bloom ! ”

✓ Is it surprising, then, that the inmates of cottages should feel the influence of the season ? Here and there you may observe the door ajar, and the window set open. There is a father turning up the soil ; there, too, is a mother in all her activity, and the little group advancing towards her, have to tell that they have been looking at the first nest of the year—a hedge-sparrow’s, which they mean to visit again, but not to touch. Surely they must have heard some lessons of kindness !

Much timber is now felled, and planting of deciduous trees should also take place. There was force in the old highland laird's charge to his son : "Be aye sticking in an acorn, Jock, it will grow while ye're sleeping." Now hedges are plashed and trimmed. And see how many ploughs are at work ! There is something pleasant in the tinklings of the horses, when you catch the sound at a little distance ; and the fresh smell of the earth is worth inhaling, as it is turned up by the share. Many an invalid has proved it to be beneficial.

In the fields we may mark the operation of sowing barley. Those who have done so most successfully in days that are past, have marked particularly the budding of the trees, and by this have chiefly regulated their casting in the grain. A maxim has been handed down among Norfolk farmers from father to son :—

"When the oak puts on his gosling grey,
'Tis time to sow barley night and day."

Meanwhile the wheat is springing up. Let us look at one of the grains which have been broad-cast so freely, or deposited in the earth by means of the drill. The little germ is laid up in the midst of nutriment for its early growth. When, therefore, a grain of corn is cast into the ground, the germ expands, and a great

SIGHTS IN SPRING.

change takes place. From one end of the grain issues a green sprout, and from the other a number of white threads. The latter sink in the earth, and form the roots that firmly fix the plant in the ground, and collect nourishment from the soil for its support; the former becomes the blade, from which grows "the ear and the full corn in the ear."

And here the thought may be suggested that there has been a sowing time with us. The good seed of the kingdom, which is the word of God, has, perhaps, been cast on the mind from our earliest years. Familiar we may be with the language of the Bible, and of the gospel of our Lord Jesus Christ. What, then, has been the result? Is the soil of the heart like that which yields only tares, or thistles, or poppies? Is the crop only one of gaudy weeds, or does it produce dispositions which can only be compared to the pernicious fox-glove and the deadly nightshade? Are we yielding the fruits of the flesh, or of the Spirit? How important is it that such inquiries should receive a faithful answer!

Let it, then, be remembered by every one who reads these pages, that if the seed of Divine truth has not yet vegetated in the heart, it is not because that seed has changed, for it "abideth for ever;" it is not because

THE GOOD SEED.

there is no genial power to be put forth, for the Sun of Righteousness still shines and reigns in heaven ; and the dew of the Holy Spirit still falls around. No ! The fault—the sin is our own. It is because we love that hardness of heart which prevents the seed taking root. Let this, then, be bewailed before God, lest he give us up to that barrenness of soul which precedes its everlasting destruction.

Happy—unspeakably happy are they, who have received “the incorruptible seed of the word of God.” Sensible of their sinfulness, they have beheld in our Lord and Saviour Jesus Christ the only Mediator between God and man, and, trusting in his atoning blood and perfect righteousness, they shall never be confounded.

As yet, we have looked only on the objects which the day presents ; night, however, has others of interest too. In the middle of March, about half-past nine o'clock, the firmament presents much to contemplate. Arcturus, in Boötes, is due east, about twenty-five degrees high. The word Boötes, derived from the Greek, signifies a wagoner, ploughman, or herdsman. This constellation was so called from its attending and seeming to urge on Ursa Major, which is in the form of a wagon drawn by oxen.

SIGHTS IN SPRING.

“Child of the earth! Oh! lift thy glance
To yon bright firmament’s expanse;
The glories of its realm explore,
And gaze, and wonder, and adore!

“Doth it not speak to every sense
The marvels of Omnipotence?
Seest thou not there the Almighty name,
Inscribed in characters of flame?”

Among the discoveries of Dr. Herschel, was one, that several of the stars, which appear single to the common observer, are double. The most beautiful double star in the heavens, is called Mirach: the largest star is of a red, and the smallest of a blue colour, having the appearance of a planet and its satellite. Many other stars might also be mentioned as worthy observation, but for these the reader must be referred to works on Astronomy.



APRIL.

APRIL.



“From the moist meadow to the wither’d hill,
Led by the breeze, the vivid verdure runs,
And swells, and deepens, to the cherish’d eye.
The hawthorn whitens ; and the juicy groves
Put forth their buds, unfolding by degrees,
Till the whole leafy forest stands display’d
In full luxuriance to the sighing gales ;
Where the deer rustle through the twining brake,
And the birds sing conceal’d. At once array’d
In all the colours of the flushing year,
By Nature’s swift and secret-working hand!”

THOMSON.

ONE of the poets of England wisely said :—

“Oft let me wander o’er the dewy fields,
When freshness breathes, and dash the trembling drops
From the bent bush, as through the verdant maze
Of sweet-brier hedges I pursue my walk.”

And why should we not imitate him ? Come ! let us go forth into the fields, and gardens, and orchards, and rejoice in the abundance falling from the bounteous hand of our heavenly Father.

A month ago our progress might have been stopped if the eye had caught that image of beauty,

SIGHTS IN SPRING.

“A violet by a mossy stone
Half hidden from the eye;
Fair as the star, when only one
Is shining in the sky.”

But now, look ! what groups of these flowers adorn
the hedgerows, and fill the air of secluded spots with



Salix fragilis.—PALM BRANCH.

- a.* Male catkin, or bunch of barren flowers.
- b.* Female catkin, or bunch of seed-bearing flowers.

THE DIAL OF FLOWERS.

their grateful fragrance! How richly is that green bank enamelled with the lady-smock, arrayed in full blossom of silver white! The double blossoms of the daffodil are now abundant. The fragrant lilac is in bloom; the garden honeysuckle twines its rich green tendrils and wreaths of scented flowers around the cottage porch; and the golden chains of the laburnum are in rich profusion.

A beautiful idea is found in Marvell's poem of the Garden, of a dial of flowers, the time being shown by the opening or closing of the blossoms. It is thus given :—

“How well the skilful gardener drew,
Of flowers and herbs this dial new!
Where, from above, the milder sun
Does through a fragrant Zodiac run,
And as it works, the industrious bee
Computes its time as well as we.
How could such sweet and wholesome hours
Be reckon'd but with herbs and flowers!”

Mrs. Hemans has recorded the fact in the following beautiful lines :—

“’Twas a lovely thought to mark the hours
As they floated in light away,
By the opening and the folding flowers
That laugh to the summer's day.

“Thus had each moment its own rich hue,
And its graceful cup or bell,
In whose colour'd vase might sleep the dew
Like a pearl in an ocean-shell.

SIGHTS IN SPRING.

“To such sweet signs might the time have flow’d
In the golden current on,
Ere from the garden, man’s first abode,
The glorious guests were gone.”

Thus, the most magnificent of our wild flowers, the water lily, opens about seven in the morning, closes about four in the afternoon, and then rests on the surface of the water. The goat’s-beard expands its yellow disk very early, and closes before the sun has reached its meridian ; hence it is popularly called, “Go-to-bed-at-noon.” The sand-wort opens about nine, and shuts between two and three. The African marigold expands a little earlier, and closes a little later. The wild succory, or endive, expands at eight, and closes at four. The night-flowering catchfly reserves its beauties till evening, as its name denotes.

The attentive observer cannot but perceive that every plant and flower on earth appears and expands in its appointed order. “The God of the seasons has exactly determined the time when *this* flower shall unfold its leaves, *that* spread its glowing beauties to the sun, and a *third* hang down its drooping head, and withered, resign its sunny robes.”

Mrs. Hemans adds to the verses already quoted :—

“Yes, is not life, in its real flight,
Mark’d thus—even thus—on earth,
By the closing of one hope’s delight,
And another’s gentle birth ?

EVERGREENS.

“ Oh ! let us live, so that flower by flower,
Shutting in turn, may leave
A lingering still for the sunset hour,
A charm for the shaded eve.”

A splendid scene is often presented at this period by the blossoms of fruit-trees. The almond-tree is a native of Barbary and the Holy Land, particularly the banks of the Jordan, and flowers in our shrubberies in March and April. The flowers, which are rose-red or white, appear before the leaves, and grow on short foot-stalks. And who will not admire the lovely blossoms of the peach, the clustering flowers of the plum, and the rich and varied bloom of the apple-tree ?

One of the most common evergreens in shrubberies and clumps, for ornamenting the lawns of villas and country residences, is the noble laurel, or sweet bay. It is a native of the south of Europe, and flowers in April and May. The blossoms are of a yellowish white colour, and grow in short clusters. What a noble tree, too, is the horse-chesnut, a native of Asia ! It grows from forty to one hundred feet high, and it is an ornamental flowering tree from April to May. The leaves, when first developed, are very interesting and beautiful, being very large, and of a fine green colour. When enfolded in the bud, they are covered with a sort of down, which falls off, sooner or later, as

they expand, according to the dryness or moisture of the season. The growth of the tree and leaves is very rapid, both shoots and leaves being sometimes perfected in three weeks from the time of foliation. The flowers appear a short time after the leaves, and are white, variegated with red and yellow. The buds of the horse-chesnut are covered with a gummy substance, which protects the interior from wet—a beautiful illustration of the care taken by Providence of the buds of plants.

Plants, though without sensation, are living bodies. The operations carried on in their cells and tubes resemble those conducted in the vessels of animals. These are, in fact, laboratories for various processes. The sap is there ; and from this, gum, sugar, starch, and woody matter are wondrously formed. In some, volatile, or fixed oils are secreted ; in others, resin ; in others, acids ; in others, caustic alkalines.

The secretions in the various cells of plants are doubtless intended to answer some valuable purpose, though this may not at present be discoverable. Sometimes, however, the use of a particular secretion, or at least one use, may be ascertained. Many of the humble plants, called lichens, fix themselves on calcareous

rocks—those in which lime appears ; and are observed, in course of time, to sink deeper and deeper beneath the surface. It seems, therefore, that they have some mode of penetrating this hard substance, like that which many marine worms are known to possess. They do this alike, as it appears by means of an acid, probably the oxalic, acting on the lime, and gradually scooping out the rock. The same plant, when attached to rocks which are not calcareous, remains always at the surface, and does not penetrate below it.

A more familiar fact is no less remarkable. We often find buds covered with a resinous substance, which appears to be spread over them to prevent the entrance of water, which might injure the tender leaf closed up within. It may also be a defence from the ravages of some peculiar insects, which would otherwise destroy the yet unfolded germs.

Many plants have their stems covered thickly with wax, probably with the same intent. A bluish or white powder is often found as a close coating of fruit and of leaves, of which the common cabbage supplies an instance. It must often have been remarked how readily its fresh leaves throw off the water, and how, when immersed therein, they may be taken out, the surface remaining unwetted. In this respect, they

remind us of the plumage of the duck and similar birds, which swim and dive, their feathers continuing dry and uninjured.

Many aquatic plants have their leaves covered with a viscid substance, rendering them slippery to the touch, and also keeping out water. In the nettle, the stinging of which is so well known, the hair-like spines resemble the poison-fangs of serpents. At the base of each is a little vesicle, filled with a peculiar fluid, whence it is conducted through a fine tube to the point. When, therefore, we touch these spines with the naked hand, they inflict in the skin a very small puncture, which, apart from the secretion, would not be noticed. But this being discharged, and highly caustic, the sting is felt, and the skin becomes red and irritated.



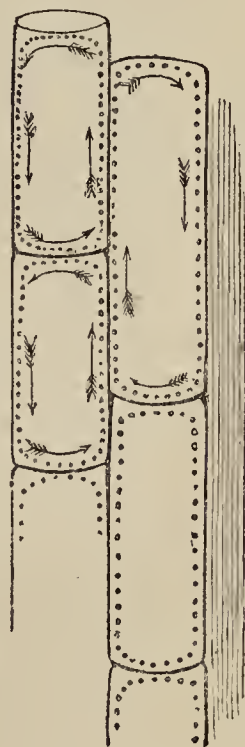
STING OF A NETTLE.

In plants having white acrid opaque juice, as the poppy and the convolvulus, the vessels containing it resemble those of the blood-vessels of animals. The microscope shows that the fluids they contain are moving in currents of considerable velocity in the one case as the motions of the globules in the other. This circulation arises, no doubt, from the vital con-

traction of the vessels. It is quicker when the temperature is high, and ceases when the plant has received an injury. The extent of the circuit traversed by a given portion of juice is limited.

A circulation of the same kind is found in some plants with nearly transparent juices. Thus, in the *caulinia fragilis*, a jointed or knotted plant, a double current may be observed, one stream ascending, the other descending. Here, the circulation is confined to the interspace between every two joints.

On yonder wall, crumbling beneath the hand of Time, the stone-crop spreads itself luxuriantly, and its bright bloom contrasts well with the grey and green of the lichens which creep over the surface. The hardy wallflower, so grateful in its fragrance, is coming into blossom, and dark green mosses, with spikes of brown, mingling with the pretty white blossoms of the nail-wort, tuft the mouldering fragment.



CAULINIA FRAGILIS.

The production of

this humble vegetable is very remarkable. It appears that the seeds of such plants are diffused very extensively and abundantly through all parts of the atmosphere. One fact will illustrate this.

The city of Glasgow is chiefly built of a beautifully white freestone, and as the great demand for it has exhausted the supply near the surface in the neighbourhood of the city, the quarries have been sometimes worked to the depth of from fifty to perhaps two hundred feet. Now, after houses are built of this stone, dug from the very heart of the solid rock, the walls within a few months, perhaps a few weeks, exhibit green patches and streaks, as if they had been painted. In spots, too, where water drips or streams down from the eaves or roof, the green becomes denser and deeper. And what is this green paint-looking substance? It has been proved to be the first stage of the vegetation of a number of species of common mosses, which, in circumstances favourable to their growth, would acquire leaves, and go on to perfect seeds.

In like manner, the top of a wall which has been built for some time, is frequently covered with a thick vegetation of mosses. But before they appeared, the seeds must have been sown there, as they could not exist in the bricks after they were burned in the

kiln. On the sides of the walls, the mosses are but sparingly, if at all, seen to grow, because, unlike the freestone of Glasgow, which readily imbibes the water, the bricks are comparatively smooth and hard, and, therefore, it is only on the top of the wall they are observed at first, chiefly in small holes or crevices, till the rotting of successive generations of them forms a thin layer of soil, which is annually extended, and affords a still better place in which the after-crops may grow. Whence, then, are the seeds of these plants obtained? Certainly from the atmosphere, where they float in all directions, even a thousand miles from land, from which they are carried down by rains, and lodged on every spot of the earth's surface, ready to spring into life and verdure.

“ 'Tis Nature's livery round the globe,
Where'er her wonders range :
The fresh embroidery of her robe
Through every season's change.

“ Through every clime, on every shore,
It clings, or creeps, or twines,—
Where bleak Norwegian winters roar,
Where tropic summer shines.”

The proliferous feather-moss grows in broad patches, in woods and groves, covering much ground, that but for this and similar mosses, would exhibit only the bare surface of the earth, and would, of course, expose the

SIGHTS IN SPRING.

roots of the trees to the drought of summer, and the frosts of winter, which are by this means effectually protected.



HYPNUM PROLIFERUM.—FEATHER MOSS.

On the damp banks of ditches, and similar places, vacant spots of earth are often left after the other portions of the soil, especially when exposed to the sun, are clothed with grass, and other herbage. On

FOLIATION OF TREES.

the bank least exposed to the sun, and even in spots where its rays never come, Hooker's shining moss may be observed to seize upon the vacant spots, and grow most luxuriantly.

Trees and shrubs may vary in different years, soils, and places, in their leafing, but their succession is constant. Mr. Stillingfleet made a calendar of the foliation of trees and shrubs in Norfolk, 1765 ; it is as follows for the present month :—

Birch	April 1	Hornbeam	April 13
Weeping Willow	— 1	Apple Tree	— 14
Raspberry	— 3	Abele	— 16
Bramble	— 3	Chesnut	— 16
Briar	— 4	Willow	— 17
Plum	— 6	Oak	— 18
Apricot	— 6	Lime	— 19
Peach	— 6	Maple	— 21
Filbert	— 7	Walnut	— 21
Sallow	— 7	Plane	— 21
Alder	— 7	Black Poplar	— 21
Sycamore	— 9	Beech	— 21
Elm	— 10	Acacia Robinia	— 21
Quince	— 10	Ash	— 22
Wych Elm	— 12	Carolina Poplar	— 22
Quicken Tree	— 13		

And now let us pause a moment, and give way to other thoughts. What a change in the vegetable world has taken place since our observations commenced ! If Galileo could infer from a lifeless and withered straw on the floor of his dungeon, the being of an all-wise

Creator, how much more may we gather, in reference to him, from the resurrection of the vegetable world from its death-like slumber !

Listen ! and you may hear in many a spot the cuckoo's call. It proclaims the advance of spring. The familiar note is uttered by the male bird alone : the female makes only a weak chattering noise. Its food consists of the caterpillars of moths, butterflies, and other insects. Several of these birds were observed on one occasion skimming over a large pond, and chasing dragon-flies, some of which they caught while settled on the weeds, and others on the wing.

Our migrating birds are now rapidly arriving. The sand-martin is here. The common swallow dashes hither and thither. The martin is skimming over the pools and streams in quest of insects. But hark ! that strain could only be poured forth from the throat of one of our songsters. It is the nightingale, of which we have often read such a description as the following :—

“ When gathering shades the landscape veil,
And peasants seek their village dale,
And mists from river-wave arise,
And dew in every blossom lies ;

“ When evening's primrose opes to shed
Soft fragrance round her grassy bed ;
When glow-worms in the wood-walk light
Their lamp to cheer the traveller's sight ;

THE NIGHTINGALE.

“ At that calm hour, so still, so pale,
Awakes the lonely nightingale;
And from a hermitage of shades,
Fills with her voice the forest glades.”

It is a mistake, however, to suppose that this bird sings only at night. When the male first appears in



THE NIGHTINGALE

our island, it chooses a low damp spot with close embowered foliage; there it commences its rich and

brilliant song, only interrupted during the mid-day hours. Its notes are continued till its mate, sitting patiently in her artfully concealed nest, demands its care. Only then, during the quiet and repose of a warm night, does it perch on some neighbouring bush, and cheer her with its melody. When the young are fledged, it is heard no more till just before it takes its departure, when it regales the ear with its song.

The blackcap, almost, or quite as shy as the nightingale, and with powers of song but little inferior, now makes its appearance. This bird is very generally spread throughout England, and even in Scotland during the summer, taking up its abode in woodland thickets, or old close orchards, where its clear song may often be heard. It generally sings concealed among the leaves; and in addition to its own notes, imitates those of other birds.

The reed-wren is common in the southern and eastern counties of England, where marshy grounds afford it an asylum. Its nest is hung on the stems of three or four reeds, artfully interlaced together, so as to form a firm yet waving support. Its depth is intended for safety, for the bird has been seen sitting in it when the wind blew hard, and every gust forced it almost to the surface of the water.

NEST-BUILDING.

A quick ear may now catch the harsh notes of the corncrake, in the rich fields and meadows, especially if water be near. "Crake, crake," are signals of its presence, but so rapidly does it move among the tall grass, that it is at a distance before its flight from the spot where it has just been heard appears to be possible. Few birds are so difficult to find or to pursue.

A singular instinct is possessed by the corncrake, which leads it to put on an appearance of death when in danger, and unable to escape. A gentleman had one brought to him by his dog which appeared quite dead ; he turned the bird as it lay on the ground over with his foot, convinced that life was extinct ; standing quietly by, however, he suddenly saw it open an eye ; he then took it up, its head fell, and its legs hung quite loose ; but on putting it into his pocket, he soon found it was alive, and struggling to escape. On taking it out, it appeared lifeless as before. Having laid it again on the ground, and retired to a distance, the bird warily raised its head in about five minutes, looked round, and decamped at full speed.

This is the time for that interesting process, nest-building. The feathered tribes are in full activity.

" Some to the holly hedge
Nestling repair, and to the thicket some ;
Some to the rude protection of the thorn

SIGHTS IN SPRING.

Commit their feeble offspring: the cleft-tree
Offers its kind concealment to a few,
Their food its insects, and its moss their nests.
Others apart, far in the grassy dale,
Or roughening waste, their humble texture weave."

Some situations chosen by birds for their nests are very curious. Mr. White, of Selborne, mentions a swallow's nest on the handles of a pair of garden shears, stuck up against the boards of an outhouse; and another on the wings and body of an owl that happened accidentally to hang dead and dry from the rafters of a barn. Mr. Jesse saw a swallow's nest built on the knocker of a gentleman's hall-door, and the parent bird sitting on her eggs. She succeeded too in her effort; and the young arrived at maturity.

The skylark selects her ground with care, avoiding clayey places, unless she can find two clods so placed as that no part of a nest between them would be below the surface. In more friable soils she scrapes till she has not only formed a little cavity, but loosened the bottom of it to some depth. Over this the first layers are placed very loosely, so that if any rain should get in at the top, it may sink to the bottom, and there be absorbed by the soil. The edges of the nest are also raised a little above the surface, have a slope outwards, and are, as it were, thatched. The position in which

NEST-BUILDING.

the bird sits is a further security ; the head is always turned to the weather, the feathers of the breast and throat completely prevent the rain from entering the nest at that side, while the wings and tail act as pent-houses in the other parts ; and if the weather is violent, and the rain at a small angle with the horizon, the fore-part of the bird, on which the plumage is thickest, receives the whole of it.

The site chosen by the window-swallow, or martin, is well known, but not so the skill and labour this bird puts forth. The crust of the nest is formed of such dirt or loam as is near, and is tempered and wrought together with small pieces of broken straw to render it tough and tenacious. Building, as it often does, against a perpendicular wall, without any projecting ledge under it, the bird requires its utmost effort to make the foundation secure ; it therefore plasters well the materials into the face of the brick or stone, and by working only in the morning, gives the fabric, like a careful builder, sufficient time to dry and harden. Thus, in about ten or twelve days, it forms a dome-like nest, with a small opening towards the top, strong, compact, and warm, and perfectly adapted to all its purposes when lined with small straws, grasses, or feathers, or perhaps with a bedding of moss inter-

woven with wool. When once a nest is completed in a sheltered place, it serves for several seasons.

Not less singular is the abode of the chimney swallow. Not that it can live in the shaft where there is a fire, but it prefers one adjoining that of the kitchen, utterly disregarding its smoke. The nest is formed five or six or more feet down the chimney, and consists of the same materials as those chosen by the window swallow. It differs, however, from the abode of the latter, by being open at the top, and like a half-deep dish; this nest is often lined with fine grasses and feathers, collected as they float in the air. The address which this bird shows all day long in safely ascending and descending, is truly amazing. So strange a situation is probably chosen to secure the brood from rapacious birds, and particularly from owls, which frequently fall down chimneys, perhaps in attempting to get at these nestlings.

In some cases we are struck by instinct adapting itself to particular circumstances. Mr. Jesse mentions several cases of this kind. When, for instance, birds are obliged to be a longer time from their nests in search of food, they make much warmer nests than birds who can procure it more readily. Many aquatic birds, on this account, cover up their eggs with a pro-

EGGS OF BIRDS.

digious quantity of down and feathers to prevent their being chilled. In like manner the long-tailed titmouse, long absent from the largeness of her brood, consisting of from twelve to fifteen little ones, not only lines her nest with an abundance of the softest feathers and down, but makes it almost in the shape of a ball, with a small hole in the side to enter at, so that the young are quite secure from cold in their snug abode. In one case, a feather was observed placed over the opening of such a nest, to shut out the cold winds which prevailed at that time. On the contrary, the thrush, which readily procures worms on a neighbouring lawn or meadow, lines its nest frequently with clay.

The cuckoo makes no nest, but the female lays her eggs in the nests of other birds. Those of the hedge-sparrow are usually selected; but those of the yellow-hammer, the wagtail, and the tit-lark, or meadow-pipit, are not refused. One egg only is laid in each nest. When this is hatched, the young one is fed by the foster parent as though it were her own progeny, but it is to the destruction of her own brood.

The care of the poultry is now an interesting employment. The productiveness of the hen is truly astonishing, as, if allowed to go at liberty, well fed, and provided with a plentiful supply of water, it will

SIGHTS IN SPRING.

lay, in the course of a year, two hundred eggs. Some have been known greatly to exceed that number. Here is a kind provision for man, as the hen usually incubates only once a year. Warmth is favourable to the increase of eggs. The fowls kept by peasants in Ireland in their cabins, lay often in winter, from the warmth of their quarters ; other cases might be mentioned in which the same cause produces the same result.

It is a curious fact, that hens which are the best layers are generally the worst sitters. The desire to sit becomes known from a peculiar kind of “cluck.” The “storge,” as it is called, soon becomes strong and



EGGS OF THE REED BUNTING, PTARMIGAN, AND BLACK TERN

ungovernable. The hen flutters about, hangs her wings, bristles up her feathers, searches all about for

EGGS OF BIRDS.

eggs, and if she find any, whether laid by herself or others, will immediately sit upon them.

In due time the brood comes forth. How wondrous is the change, from the combination of the yolk and white in its nice clean shell, to the living and active little bird! The writer, in common with multitudes, saw some time ago the various stages of the process, in one of those exhibitions in which London abounds. An egg was broken at an early point, and he saw the first action of the heart propelling the blood through the newly formed vessels. In other instances he witnessed the gradual growth of the bird, heard the little tenant chipping at its shell, and saw it when it had succeeded in its effort, and first looked out on its warm chamber. When these little creatures had remained there for a short time, they were removed to a glass case ; there they were fed, after the lapse of four-and-twenty hours from their being hatched, instinctively and eagerly picking up the small bruised grits which were scattered about. After the brood had been kept in the glass case for two or three days, and been thus gradually accustomed to the air, they were removed to a railed division of the floor, a sort of barn-yard in miniature. At six in the evening they were put into small wooden boxes lined with flannel ; and at six or

seven in the morning they were allowed to come forth.

As "April showers" are so often mentioned, it will be well to notice their cause. A cloud is a collection of minute particles of water suspended in the atmosphere. Clouds differ from fogs or mists only in being higher; in all cases they are alike produced by the vapours which rise from collections of water, and indeed from the whole surface of the earth. Every hill and valley, pasture and forest, supplies a great evaporation; and even ploughed land is said to yield as much moisture to the air as an equal sheet of water.

Aqueous vapours are condensed in the higher and colder regions of the air; thus they lose their transparency, and become visible. They differ very greatly in form, magnitude, density, and other respects. These differences depend on the quantity of vapour of which they are composed, and the situations they take as they unite with one another. They are also determined, in a great measure, by the direction and velocity of motion given them by the wind. The height at which they float in the atmosphere varies with their density. The light clouds are observed higher than the summit of the highest mountains, while those which are dense and thick rise only to a small distance above the surface of

THE CLOUDS.

the earth. Their average elevation is supposed to be between two and three miles, but it varies at different times of the year.

Country people give names to the best defined, and accurately predict from them the changes of the weather. They know nothing of the systems of men of science, and yet the observations of both parties have led to similar conclusions. Let us look at some of them ; they will guide us in many a morning and an evening walk.

The cirrus, or curl-cloud, consists of fibres, or curling streaks, which diverge in all directions. It has been compared to innumerable banners on a light blue sky. When its fine tails are directed for some days to the same point of the compass, a gale of wind is often predicted from that quarter. If the weather has been for a considerable time fine and clear, the curl-cloud, appearing like a fine white fleecy line, stretched at a great height across the sky, and of which the ends seem lost in opposite points of the horizon, betokens rain. The curved variety is popularly called mare's tail. The cumulus, or stacken cloud, is composed of dense roundish masses, piled up like a pyramid or a cone. About sun-rise, small, thinly-scattered clouds, are seen like specks on the horizon. As the sun ascends they

SIGHTS IN SPRING.

enlarge and unite, till at length they appear heaped together in one large pile. Seen in the horizon towards evening or sunset, they present those beautiful tints at their edges which afford to the observer of nature so much pleasure. They add greatly, at such times, to the beauty of the landscape; but the finest effect is when the sun appears to pass between these clouds, through an opening of resplendent brightness. The formation of large cumuli to leeward, during a strong wind, indicates the approach of calm with rain. In warm weather, when those near the horizon do not disappear about sunset, but continue to rise, thunder may be expected.

The stratus, or fall-cloud, consists of horizontal layers, and comprehends fogs and mists. It is the lowest of the clouds, its under surface usually resting on the earth or the water. It is undefined in its outline, melting at its upper part into the blue sky, and often extending all round the horizon. These appearances are often the result of the spectator himself being in the mist which forms the cloud. When the sun rises in a bed of this kind, the day is generally calm and fine. It is, however, essentially a night-cloud, and usually passes into the cumulus; or, as the sun arises, gradually melts away in forms the most beautiful and fantastic.

THE CLOUDS.

The three distinct kinds of clouds now noticed are seldom seen to exist alone, or for any length of time, in temperate and changeable climates. The limits between the kinds are not, as may be supposed, very definable. Certain modifications of them, however, require to be noticed.

“ Their fleeting hues
The traveller cannot trace with memory's eyes ;
But he remembers well how fair they were—
How very lovely.”

The cirro-cumulus arises from the regular separation of a long continuous cirrus into detached roundish or fibrous masses. Its resemblance to a flock of sheep has occurred to many, probably from its fleecy appearance, and among them to our poet, Bloomfield. Having alluded to some, he thus continues :—

“ For yet above these wafted clouds are seen,
In a remoter sky still more serene,
Others detached in ranges through the air,
Spotless as suns, and countless as they're fair ;
Scatter'd immensely wide from east to west,
The beauteous semblance of a flock at rest.”

These clouds denote a fluctuation in the weather, and especially of wind, but do not immediately precede rain.

The cirro-stratus, like the former, is easily recognised in that peculiar formation popularly called

SIGHTS IN SPRING.

mackerel-backed. When it crosses the sun in the morning, it is said, there is always rain before evening.

“ For if he rise unwilling to his race,
Clouds on his brow, and lines across his face;
Or if through mists he shoots his sullen beams,
Frugal of light, in loose and struggling streams,
Suspect a drizzling day, with southern rain,
Hurtful to fruits, to flocks, and promis'd grain.”

The cumulo-stratus combines, as its name denotes, the cumulus and the stratus. It forms the intermediate state before the increasing mass of condensed vapour becomes so heavy as to fall in rain. It is the chief component of those aerial chains of mountains, which, gilded on their edges and summits by the sun setting in the opposite point of the heavens, are so attractive to the spectator.

A cloud from which rain is actually descending, is called a nimbus, or rain-cloud; but it is only during a passing shower or a thunder-storm that it can be said to have a definite form.

“ O painted clouds! sweet beauties of the sky!
How have I view'd your motion and your rest,
When, like fleet hunters, ye have left mine eye,
In your thin gauze of woolly-fleecing drest;
Or in your threaten'd thunder's grave black vest,
Like black deep waters slowly moving by;
Awfully striking the spectator's breast
With your Creator's dread sublimity,

THE CLOUDS.

As admiration mutely views your storms.
And I do love to see you idly lie,
Painted by heaven as various as your forms,
Pausing upon an eastern mountain high."

Mists and fogs may sometimes appear. They are clouds formed by vapours resting on the ground instead of rising to the firmament. Dark as they may seem to us, to the eye of an eagle they are perhaps as bright as some of the golden masses of other seasons are to us on a splendid evening. So much depends often on the point from which an object is beheld. It attracts one, and repels another, just because, though still the same, it is seen in different lights.

The young are often anxious to pursue their own course, which appears so bright. They wish to be free from the gloomy restraints under which they are placed in early years. But those who know more of life than they can do, feel that discipline is as kind as it is wise. The highest authority declares that "it is good for a man to bear the yoke in his youth." How many are greatly indebted to the training with which they were favoured by judicious parents and teachers ! How many, for want of it, have suffered incalculable loss !

In like manner the trials of the true disciple of Christ have a bright and a dark side. When the view

SIGHTS IN SPRING.

is confined to circumstances of necessity or suffering, it may be gloomy, but beheld in the light of the exceeding great and precious promises of the gospel of Christ, all is bright. Then affliction appears to work “a far more exceeding and eternal weight of glory ;” and even death is gain.



MAY.

M A Y.



“ Oh let me worship Him whose breath
Call'd into life a world so fair,
And still from seeming age and death
Its beauty doth repair!

“ He rolls the world upon its way,
He weds it to yon flaming sphere
Sending the sunshine to the day,
The spring-time to the year.

“ All seasons of his glory tell,
And incense to his altar bring;
In hymns of praise their voices swell,
But chiefly thine, O Spring.”

DODDS.

VARIED and beautiful indeed are the tints which now adorn the robe of nature. The meadows are of a golden yellow, with the countless flowers of the buttercup. The hedges are white with the richly-scented blossoms of the hawthorn. The pink petals of the dog-rose are unfolding on their long and slender stems, as if designed for garlands of rejoicing. And the climbing honey-

SIGHTS IN SPRING.

suckle, with its rich festoons, contributes its perfume to fill the air with fragrance.

The delicacy and variety of the hues of the foliage in May, form a contrast to its mingled reds, browns, and yellows in October. Though less rich, they are far more pleasing, for they bring with them the promise of bright days and summer's fulness, with the early dawn of its mornings, and its calm warm evenings. They tell us, too, of life and activity through the whole animal creation. But the gorgeous hues of October warn us of the cold dark days and long nights of winter, when death reigns throughout the vegetable kingdom; the tuneful are mute, and many of the active have ceased to be busy. Still the closing season of the year has its pleasures and advantages; but May is a time peculiarly joyous; the season when the works of the Creator are most attractive, and when there is a vast concord of voices speaking of his preserving care, his wisdom, and his goodness. Let us wander forth, then, to see and adore Him in his works.

The meadow foxtail grass may be frequently met with in our walks; it sends up its bushy spike in April and May. It thrives well in a rich soil, neither very wet nor very dry, and is, perhaps, as valuable a

THE GRASSES.

grass as any we possess. It has the three great requisites of quantity, quality, and earliness, in a superior degree to any other. After it has been mown, it shoots freely, and the next crop, or after-math, is much relished by all descriptions of farm-stock. All the grasses, as they successively appear, are worthy of notice. Well has it been said, "What a garden has a grasshopper!"



ANNUAL MEADOW GRASS

If now we look around, what a multitude of objects claim our notice! Even one may yield much pleasure to the mind. So Wordsworth found it as he sang:—

"I wander'd lowly as a cloud
That floats on high o'er vales and hills,
When all at once I saw a crowd,
A host of golden daffodils;
Beside the lake, beneath the trees,
Fluttering and dancing in the breeze.

"Continuous as the stars that shine
And twinkle in the Milky-way,
They stretch'd in never-ending line,
Along the margin of a bay;
Ten thousand saw I at a glance,
Tossing their heads in sprightly dance.

SIGHTS IN SPRING.

“ The waves beneath them danced ; but they
Outdid the sparkling waves in glee ;
A poet could not but be gay,
In such a jocund company ;
I gazed—and gazed, but little thought
What wealth the show to me had brought :

“ For oft when on my couch I lie,
In vacant or in pensive mood,
They flash upon that inward eye
Which is the bliss of solitude ;
And then my heart with pleasure fills,
And dances with the daffodils.”

And now for an experiment worthy remembrance, as we pursue our inquiries. Take a flower of the common buttercup, and pull off the leaves of the outer cup, called the calyx, and also the petals, or parts of the flower, one by one, and some little parts, called stamens, are left behind. These are seated on the receptacle—that point on which the seed-vessels or fruit are immediately placed. It would not be so with a rose. If this were served so, then, in plucking off the leaves of the calyx and the petals one by one, few, if any, of the stamens would be left behind. For, in this instance, they are seated on the calyx, and are therefore removed with it. Here there is not only a simple, but most important fact. The stamens remaining after the calyx is removed, show, almost without exception, that the plant is poisonous ; but when the contrary occurs, we know that the fruit when ripe, will certainly be

THE BUTTERCUP.

harmless, and what is more, friendly and grateful to man.

How can we sufficiently admire the wisdom and goodness of the Almighty Creator, who has thus inscribed on these plants an invitation and a caution, which we disregard so long as we remain ignorant of these facts! It is stated that a person in Sweden, having eaten some of the fresh leaves of the common garden monkshood, became insane. The surgeon, who was called to his assistance, declared that the plant could not have occasioned the ravings of this individual, and, to convince the bystanders, ate very freely of the leaves; but, sad to tell, he soon after expired in the greatest agonies. Now, had he been acquainted with the poison-mark just pointed out, he would not have incurred so terrible a risk, and his life would have been preserved.

Another fact is worthy of notice before we pass on. Few things, perhaps, are better known than the flower of the buttercup, yet it will repay the trouble of a close examination. At the base of each petal there is a small cavity, easily seen when the eye is in search of it, which secretes a small quantity of pure honey. The species of buttercup, natives of this country, amount to fifteen; and in every one of them is this little honied

pore to be found. Thus, there is a ready and unerring character of the genus. The drop of honey lodged in this cavity, is in a singular manner contrasted with the poisonous plant that produces it. Nor are the poisonous qualities of these plants confined to one part; the flowers, leaves, stem, and root, have been found to be equally full of the same pernicious juice.

Buttercups are never found in poor soil or in hilly situations, but in rich valleys, where the grass is luxuriant. The more common of the two frequently met with in the pastures near London, and near the sea-coasts of Scotland, is the bulbous-rooted one, which may be easily recognised by digging up the plant. The root is somewhat like a leek, or a small onion, while the acrid species has a fibrous root, without any bulging. But without digging up the plants, the two sorts may be instantly known by the calyx, or cup, which supports the yellow leaves or petals of the blossoms. This cup has its five leaves upright, or nearly so, in the acrid sort, and bent downwards in the bulbous species. Besides these two, there are several other species, not unlike them in the flowers, but having other peculiarities. Such is the creeping sort, which has large dark-green leaves and creeping roots; the spear-wort, with long leaves; and the goldi-

locks, which is slender in form, and grows in woods and lanes. All the species are more or less poisonous, but against them there is a safeguard worthy of notice. Though children so frequently gather the flowers, few, if any, accidents occur, because their acrid, disagreeable taste prevents their being eaten.

It seems likely that the intention of Providence in rendering these poisonous plants so common, was to afford protection to the grasses and other herbage eaten by cattle. Were the whole green sward of the field composed of nothing but grass, it might be eaten so bare as to destroy the roots, and thus produce a scarcity of forage. But the poisonous buttercups being so much mingled with the grass, the cattle are prevented from eating up the latter so as to hinder its increase as the season advances.

The field daisy is not quite so conspicuous as the buttercup, though in some pastures it is so abundant as to render the whole turf gay with its pretty blossoms. The Latins called it *bellis*, or *bellus*, as much as to say, "Nice one." With the French and the Italians, it bears the same name as a pearl. Our poet, Chaucer, says, nothing but the daisied fields in spring could take him from his books ; that he found that season ever new, and should love it till his heart died.

If we go from the fields to the woods and copses, we find a profusion of flowers. Among these, the primrose, the wood wind-flower, and the blue bell, are the most common, and as these grow more usually in broad patches than in a dispersed manner, they are more likely to attract notice. Let us look a little at each of them.

The primrose is a great and general favourite. Its name is derived from its early flowering. Though in its greatest beauty in May, occasional plants are in flower from Michaelmas, and throughout the winter. The primrose varies in colour from the common pale sulphur yellow to white, on the one hand, and to bright yellow and purple on the other. But the most remarkable variation is in the general flower stalk, or scape. In the common varieties in the woods, the scape is too short to be seen, and hence the individual flowers appear to rise from the bosom of the leaves; yet there always is a scape, however inconsiderable it may be. In the cultivated varieties of the gardens, the scape may be observed from the eighth of an inch long to the length of four, six, or eight inches. The purple and other coloured varieties, when the scape rises to the height of a few inches, bearing on its summit from five to seven or nine flowers, are well known

THE HAWTHORN.

under the name of polyanthus, taken from the Greek, for many flowers. It is not, however, a distinct species, but only a variety of the common primrose.

The blue-bell is as much distinguished by its fine odour, as for its beautiful blue colour, and the graceful drooping of the flower-spike. There is a variety with white flowers, but it is by no means common.

The anemone, or wood wind-flower, is very common and pretty, usually white, with a tinge of red or rose-colour on the petals. It has similar acrid qualities to the buttercup, and would prove poisonous if taken into the stomach.

In the hedges, the hawthorn, or May-bush, beautifies every lane, diffusing through the air its

“Fragrance exquisite, as new-mown hay.”

The varieties of this native tree, which is both ornamental and useful, are not very numerous. But some of them are so much admired as to be propagated by grafting, particularly the Glastonbury thorn, which sometimes blows as early as Christmas. The most admired, however, is the rose-coloured one, a very beautiful sort, accidentally discovered a few years ago in a hedge near Perth. The common red variety is very inferior to this in appearance. A double white

SIGHTS IN SPRING.

one is occasionally seen in the shrubberies of the curious.



Prunus spinalis.—BLACKTHORN.

The barberry and the maple are now in flower; so, too, is the walnut tree. The flowers of the chesnut begin to unfold; and the tulip tree and the mulberry put forth their leaves. Of the shrubbery, the lilac is one of the finest ornaments. Cowper has well traced its varieties.

“ Various in array, now white,
Now sanguine, and her beauteous head now set
With purple spikes pyramidal; as if set
Studious of ornament, yet unresolved
Which hues she most approved, she chose them all.”

As we dwell with delight on the forms and colours of flowers, well may we look upwards, and think of Him who makes

“ All nature beauty to the eye.”

THE MAY-FLY.

Distinct colours, as well as those that are mixed, are very beautiful. Who has not admired the clear blue of the sky, and the vivid green of the meadows? No one ever wished for an alteration of their hues. And is not the red rose the queen of flowers? A bed of flowers of the same tint, if not too large, is a beautiful object; and who does not admire a cottage placed in a bower of richly and thickly growing roses?

If we visit the river's bank, what myriads of insects may be seen to load the air! All are of the same species—the ephemera, or May-fly. Look at them, as borne on light pinions, they hover in hosts above the water, rising and descending as if pleased with their new powers, and highly enjoying their fleeting moments of existence. Short, very short, is their course; the name ephemera marks its brevity, it means a day, and in a few hours their course is ended.

The numbers in which the May-fly appears are almost incredible. A vast assemblage of them was seen on one occasion in the meadows of the Wye, near Bakewell. The air was crowded with these insects; the banks, the gates, the stones jutting out above the surface of the river, were absolutely covered with them; myriads were struggling on the surface of the

SIGHTS IN SPRING.

water ; and the trout and grayling were snapping them up every moment.



THE MAY-FLY.

See, again, what numbers of aquatic beetles are wheeling and sporting on the surface of the still water. There is a little creature skimming rapidly along, delighting in the warm sunbeams which glance on the liquid element. There is another admirably ploughing his aquatic course,—it is the water-beetle. It is expressly adapted to the medium in which it passes the greater part of its existence. Take one out, and examine its structure. It is of a flattened form, with a boat-like shape, broader behind than before, and having no projecting parts. The cases of its wings, and the horny coverings of its body, appear to have a

moisture which repels the water, for when taken out it is perfectly dry. It is furnished with oars, and powerful muscles by which they are worked. And there is another beetle, the water-boatman, which floats on its back; its surface thus representing the deck of a small vessel, and the two hinder limbs, which are very long and formed for rowing, extend at right angles with the body, like the long oars of a galley.

The water of stagnant pools, teeming with animalcules, may now be examined with advantage.

Let, then, the microscope be used, and it will reveal a world of wonders. One animalcule is called the proteus, from its curious changes of figure—a figure which seldom remains many minutes the same. No one



DROP OF STAGNANT WATER.

can say, indeed, what is its shape; nor is the reason of its changes at all understood. The animal looks like a speck of jelly, but is highly irritable. Sometimes it is long, like a worm, and at others it has the form of a ball. Sometimes its figure is irregular and grotesque, and at others it shoots

out arms from a common centre, like a star-fish. It seems to be constantly engaged in altering itself,—why we know not, but doubtless for some wise purpose yet to be discovered.

Another, the figure of which is spherical, is very common. It has a rapid whirling motion on its own axis. Another moves by first going to the right, then to the left, and so on alternately. Another interesting and very common animalcule is met with in great numbers in sour fluid paste or spoiled vinegar. In the latter it becomes so large as to be seen in a good light, with the naked eye. In shape it is like an eel, and it swims with the same sort of movement.

That the motions of animalcules are voluntary, that they have feeling, and perhaps other senses to us inexplicable, is very plain. Swimming as they do by shoals in a single drop of water, they skilfully avoid any obstacles in their way. They alter their mode of proceeding; darting along like an arrow, or wandering through their mimic ocean with an easy gentle gliding, as if enjoying their existence.

The animalcules swarming in the waters, and invisible to the naked eye, afford so much nourishment to larger animals, that several species, such as the herring, the salmon, and even the whale, seem to require little

THE WATER-SHREW.

else for their support. It has been concluded, therefore, that the air equally swarms with life, but this is not correct. We can see, when a bright ray of light streams through an apartment, or a shaded corner of a wood or garden, that

“ The gay motes which people the sunbeams ”

show no sign of life. On the contrary, they consist of minute particles of dust, shreds of hair, down, cotton, wool, and similar substances, swept away from the surface of things by the passing breeze. A fly, a gnat, or a bird, may indeed flit across this sunbeam, but the occasional appearance of these creatures would not allow it to be said that the air swarmed with them, as the waters do with animalcules. When, too, the microscope is applied to the sunbeam, it always proves that, so far as animal life is concerned, the air is a blank, with the exception of creatures which are visible.

Mark that little animal swimming on the water. See, it has dived, but the clear water permits its track to be seen, and it appears as if attired in a coat of silver ; it is the water-shrew. It lives in burrows scooped out in the bankside ; but it seems to seek and attain its food rather in the water than on the land. This consists of aquatic insects, and the caterpillars of

various species of ephemera. The runs or roads, worn bare of herbage by several of these animals constantly traversing the same route, are easily discernible. They may be traced from the burrow to the same point on the margin of the pond or rivulet where they take the water.

In their excursions they constantly utter a shrill cry, which is always repeated when two shrews pass each other in their runs on the bank, and frequently also as they cross each other's course in the water. They swim and dive with great facility. The silvery lustre they wear beneath the water is owing to the air contained in the close fur of their coat, which resembles that of a mole. On coming from the water, this coat appears to be perfectly dry; but on shrews landing they have been observed to shake themselves suddenly, in order to throw off any drops adhering to it. The water-shrew does not devour its prey in the stream, but having secured it, it comes ashore, and sitting on a stone or clod there steadies its prize between its fore-paws, and so commences the feast. The beetle called the water-boatman is often chased and caught by this active little creature. It also pursues shoals of minnows or sticklebacks, but can seldom succeed in making a capture, owing to their sudden movements

THE HARE.

and extreme rapidity. The water-shrew is, in its turn, preyed upon by the weasel.

The water-rat is now very busy. It must not be confounded with the destructive creature so well known to the farmer, and which also frequents the banks of ditches, rivulets, and canals. Excepting the structure of its tail, the water-rat is a miniature representation of the beaver. It swims and dives very adroitly, and excavates deep furrows in the bank. Its food is entirely vegetable, consisting of roots and aquatic plants. Evening is the time in which it steals forth to enjoy the delights of active existence, and it continues alert during the night.

We now turn again to the land. The hare breeds in May, and the leverets, when taken young, are easily domesticated, and will become bold and familiar. Our poet, Cowper, proved this. He says:—

“ One shelter'd hare
Has never heard the sanguinary yell
Of cruel man, exulting in her woes.
Innocent partner of my peaceful home,
Whom ten long years' experience of my care
Has made at last familiar; she has lost
Much of her vigilant instinctive dread,
Not needful here, beneath a roof like mine.
Yes—thou may'st eat thy bread, and lick the hand
That feeds thee; thou may'st frolic on the floor
At ev'ning, and at night retire secure

SIGHTS IN SPRING.

To thy straw couch, and slumber unalarm'd;
For I have gain'd thy confidence, have pledg'd
All that is human in me, to protect
Thine unsuspecting gratitude and love.
If I survive thee, I will dig thy grave;
And when I place thee in it, sighing say,
I knew at least one hare that had a friend."

A lady brought up two leverets. One was very docile and gentle, delighting to lie in her lap, or on the hearth-rug by the fire. The other was morose, and a foe to the cat and a small spaniel, over which he had the complete mastery. Another instance is still more curious. A leveret, brought home to a gentleman's house, was nursed and suckled by a cat, whose kittens had been destroyed. The leveret, however, was soon missing, and could not be found. It was, therefore, supposed that some strange cat or dog had seized it; but, in about a fortnight after, as the gentleman was sitting one evening in his garden, he observed something approaching; it was the cat, with tail erect, and purring most complacently; and something more was seen gambolling after her. This proved to be the lost leveret, which she had adopted in the place of her kittens, and continued to support with great affection.

Among our winged summer visitors, the lingerers on the passage have at length made their appearance.

RETURN OF BIRDS.

The swift is now seen whirling round the old tower, uttering ever and anon its shrill loud scream as it dashes along with astonishing velocity. It is on the alert at the first dawn of day, and, except while sitting on its eggs, or reposing during a few hours at night, its whole existence is passed on the wing ; on the wing it eats, drinks, bathes, and collects materials for its nest. It breeds in the dark crevices between the stonework of towers and other buildings, making a simple nest of dried grasses and feathers. Unlike the swallow and the martin, it only lays two eggs of a milk-white colour, and breeds only once during its sojourn here. The female sits closely and patiently all day ; but just before the close of evening she rushes forth, sweeps around for a few minutes, as if to stretch her pinions, snatches a hasty meal, and returns to brood over her eggs. The feet of the swift are expressly fitted to enable it to cling firmly to the rough surfaces of the stones of buildings or the sides of rocks, the crevices of which afford it a retreat.

The flycatcher, an elegant little bird, may now be seen. It waits till the trees are full of foliage, and the insects swarm in the air, before it ventures to visit us. Its actions are worthy of notice : how light and easy is its flight ! Choosing some twig, it looks out for its

prey, gives a short but rapid chase to such insects as pass by, returning after each excursion to the same spot. The flycatcher is a mute, familiar bird, frequenting gardens, orchards, and plantations, and commonly building on the branches of fruit trees nailed against walls, or the sides of houses. When the young leave the nest, they remain for a considerable period under the care of the parent birds, who feed them very diligently. In their first plumage they are prettily mottled with white.

Among the most remarkable of our winged arrivals of this month is the goatsucker, nightjar, or fern-owl. Its favourite haunts are the borders of woods, narrow woody valleys, and extensive fern beds, clothing the slopes of upland pasture grounds; and it has been seen and heard among clumps of sycamore trees, near farm-houses. No longer should it be called the goatsucker; the name arose from the notion that it drained the udders of goats. It follows indeed cattle, goats, and sheep, but it is attracted by the flies which are their tormentors, and which it is busy in catching.

As the evening draws on, the great bat makes its appearance. It is partial to the neighbourhood of large sycamore trees, round the tops of which, and among the branches, several have been observed on

many occasions dashing along with great rapidity, as if in earnest chase.

“The great bat returns, or migrates,” says White, “very early in the summer; it also ranges very high for its food, feeding in a different region of the air to that occupied by the common bat. Now, this is exactly the case with swifts; for they take their food in a more exalted region than the other species; and are very seldom seen hawking for flies near the ground, or over the surface of the water. From thence I would conclude, that these birds and the larger bats are supported by some sorts of flying gnats, beetles, or moths, which are of short continuance; and that the short stay of these strangers is regulated by the defect of their food.”

During this month, the woodman may often be observed diligently at work. The larch, the elder, and the oak are felled. As we look on, profitable thoughts may arise in the mind. *We* are like those trees, and the axe must soon be laid at our root. The tree, it has been well said, falls as it *leans*. What, then, is our tendency? Is it earthward or heavenward? Are we “carnally” or “spiritually” minded? Let us not be satisfied without having these questions fully answered. The Bible furnishes the only infallible reply. To its inspired pages, then, let us repair; and as they tell us

SIGHTS IN SPRING.

of "death" as the consequence of worldly mindedness, let us seek, through faith in Christ, and the operation of the Holy Spirit, so to "set our affections on things above," that we may henceforth enjoy "life and peace."

In the evening, the stars may well receive attention. Corona Borealis, Libra, Castor and Pollux, Leo, Coma Berenices, and many others may now be seen.

"Count o'er those lamps of quenchless light,
That sparkle through the shades of night;
Behold them!—can a mortal boast
To number that celestial host?

"For what art thou, O child of clay,
Amid creation's grandeur, say?
Even as an insect on the breeze,
Even as a dewdrop lost in seas!"

And yet for every believer in Christ, humble as he may be, there is not merely hope, but confidence. It may be cherished even as he gazes on the glories of the firmament. For then a voice is saying—

"Yet fear thou not!—the Sovereign hand,
Which spread the ocean and the land,
And hung the rolling spheres in air,
Hath, even for thee, a father's care!

"Be thou at peace!—the all-seeing Eye,
Pervading earth, and air, and sky,
The searching glance which none can flee,
Is still, in mercy, turned on *thee*."

Sights in Summer.





THE RELIGIOUS TRACT SOCIETY,
36, PATERNOSTER ROW, AND 65, ST. PAUL'S CHURCHYARD;
AND SOLD BY THE BOOKSELLERS.

J U N E.



“ Now have young April and the blue-eyed May
Vanished awhile, and lo ! the glorious June
(While nature ripens in his burning noon)
Comes like a young inheritor ; and gay,
Although his parent months have passed away :
But his green crown shall wither, and the tune
That ushered in his birth, be silent soon,
And in the strength of youth shall soon deeady.”

PROCTOR.

How beautiful is morning ! It opens the night-folded blossoms, bids the tuneful choir enliven the woodlands with their music, and summons man to his daily toil.

Oh ! timely happy, timely wise,
Hearts that with rising morn arise !
Eyes that the beam celestial view,
Which evermore makes all things new !

New every morning is the love
Our wakening and uprising prove ;
Through sleep and darkness safely brought,
Restored to life, and power, and thought.

“ New mercies, each returning day,
Hover around us while we pray ;

SIGHTS IN SUMMER.

New perils past, new sins forgiven,
New thoughts of God, new hopes of heaven."

Yes! so it is when prayer is sincere; not that of the lip, but of the heart; not that of human caprice, but the dictate of the Spirit of grace and supplication; not that which self-righteousness presents, but the offering for which acceptance is sought, entirely through the mediation of our Lord and Saviour. May such be our morning prayers, and those of evening too!

To some creatures, morning, instead of rousing to activity, brings repose. The prowling fox has retired to his den. The pole-eat has gained its retreat. The timorous hare has sought her form. Creatures active only during the hours of darkness have concealed themselves. The owl is in her ivy-covered bower. And in the hollow tree, or the chamber of some ruined tower, the bat is suspended, asleep.

Already the creatures that rejoice in the return of day have bestirred themselves. "The breezy call of incense-breathing morn" now invites the observer of nature, and well is it to obey it at the earliest twittering of the swallow, and the first hum of the bee. While yet the sun is in the chambers of the east, and around him are the roseate clouds, the morning dew glitters like diamonds, and the air is laden with fragrance.

THE LEAFY MONTH.

One of our poets, finely describing a ship, speaks of its sails making a pleasant noise,

“ The noise as of a hidden brook,
In the leafy month of June,
That to the silent woods all night
Singeth a quiet tune.”

Another tells of

“ A season atween June and May,
Half pranked with spring, with summer half imbrowned.”

Imbrowned may properly be called a June word. In April and May the year is green, in June it begins to be imbrowned. Milton brought the word from Italy, and thus applies it :—

“ Both where the morning sun first warmly smote
The open field, and where the unpierced shade
Imbrowned the noon-tide bowers.”

Welcome, in all its hues, to leafy June. Who is not charmed by its sunshine and flowers? It is, indeed, a season of beauty and melody. The remark should, however, be made that a great difference appears in the leafing of our shrubs and trees. Some, like the elder, show leaf as early as January; others, as the gooseberry, about the beginning of March; others, as the oak, not till May; while the acacia, or locust tree, is not in full leaf till about the beginning of June.

SIGHTS IN SUMMER.

All leaves, with the flowers that accompany them, demand attention. Here is a representation of those of the white poplar.



Populus alba.—THE WHITE POPLAR.

a. Male catkin.

b. Perfect male flower.

c. Female catkin.

d. Female flower.

e. Capsule bursting, and discharging its seeds.

A difference as to time is also observable in the blowing of flowers. This circumstance is one of the wonders of the creation but little noticed, from its being of common occurrence; and yet it ought not to be overlooked because it is familiar, since it is

as difficult of explanation as the most stupendous phenomenon of nature.

A poet asks—

“ Say, what impels, amidst surrounding snow
Congealed, the crocus’ flamy bud to glow?
Say, what retards, amidst the summer’s blaze,
The autumnal bulbs, till pale declining days?”

To this inquiry, the botanist, whatever his scientific knowledge, is unable to give any answer. Though the blowing of the two sorts of crocus, the vernal and the autumnal, differs so greatly, he knows they are only varieties of the same species. And hence all we can say is in the words of the same poet :—

“ The God of seasons, whose pervading power
Controls the sun, or sheds the fleecy shower—
He bids each flower his quickening word obey;
Or to each lingering bloom enjoins delay.”

The wild plants now blowing most abundantly in the fields are the various kinds of grass, as well as the cultivated species of corn, which botanists rank among the grasses. This may excite some surprise, and yet it is certain that grass has a flower no less complete in its several parts than a lily or a rose. On taking up a spike, or panicle of grass, there may be disappointment in expecting to perceive the several parts of the flower, as this may not be quite expanded. But when it is in full bloom, the chaff will be found to be double,

SIGHTS IN SUMMER.

the outer or flower-cup consisting of two leaflets, one large and bluntly oval, the other smaller and flat; the inner or corolla also consisting of two parts or petals.



CORN PLANTS.

The catstail-grass is one of the most common, and may be found in various soils and situations, assuming, in consequence, a considerable diversity of appearance. In moist meadows, the spike is sometimes four inches long; while in dry, poor soils, it is often not more than half an inch, or even less. On the tops of walls, where it may occasionally be seen, or on dry, barren

WHEAT.

heaths, the stem, instead of rising upright, is procumbent, while the roots, instead of being fibrous and spreading freely, grow knotty and jointed, like those of couch-grass. If, however, this dwarfed, knotty-rooted grass be transplanted from the wall-top or the heath, into the rich, deep soil of a garden, the stem will become erect and tall, and in the following season the spike will be from six to eight times longer.

In every species of grass and corn there is a simple unbranched stem, straight, hollow, and jointed, or knotted at certain intervals. At each of the joints a single leaf surrounds or sheathes the stem to some distance, and then spreads out, into a long, narrow surface of equal breadth, all the way till it approaches the end, when it invariably narrows off to a point.

Wheat is the most highly valued of all the corn plants. In some cases poverty forbids its culture, and restricts subsistence to the cheapest means by which it can be sustained. Where, on the contrary, choice can be exercised, bread made from wheat is freely eaten. One sort is called spring or summer wheat. It is not so hardy as the winter kind; the stem being thin and delicate, the ear more slender and less erect, and the whole plant having a weaker appearance.

This grain is found in the more southerly and the

midland districts of our land. Its principal advantage is in the security it affords against the serious consequences of a cold and rainy spring.

In every country there will be some spots more favourable than others, and some persons more successful in their agricultural toils. Pliny tells us that a Roman named Cresinus produced such large crops from a very small spot of ground, that he became an object of envy to the people, who cited him before the Curule Edile, and a public assembly, to answer a charge of sorcery. But what was his reply to the accusation? He produced his efficient implements of husbandry, his well-fed oxen, and a healthy young woman, his daughter, and exclaimed, "These, Romans, are my instruments of witchcraft, but my toils and cares I cannot show you." How much may be still accomplished by similar means! "The soul of the sluggard desireth, and hath nothing: but the soul of the diligent shall be made fat." Prov. xiii. 4.

The thistle by the way-side is a troublesome weed, yet, in cultivated ground, it is not without interest to the careful observer of nature. The flowers differ in form from those of the daisy, but like it they are aggregate, or compound. The ass browses on the thistle, in preference, it would seem, to any other herbage, which

THISTLES.

might be supposed to be more palatable. And why is this? It may be, that from the structure of the tongue of that animal, it requires the stimulus of the prickles of the thistle, in the same way as peacocks are fond of cayenne, and we of pepper and horse-radish. In this manner goats will eat the shoots of gooseberry bushes, and deer the prickly furze, and still more prickly holly.

The thistle is fed upon by a great number of insects, particularly by one of our largest and most beautiful butterflies—the painted lady. These plants, therefore, are not useless; they form a link in the great chain of creation. As to the particular species placed in the royal arms of Scotland, there has been much discussion. One botanist states, that the common cotton thistle is cultivated by the Scotch as their true badge, while another gives the preference to the spear-plume thistle, as being most common by the way-sides, while the other is less frequent; and a third contends, that the usual heraldic figure seems to be most like the musk thistle, a plant frequent on limestone soils. The truth seems to be, that we may as well try to find the unicorn in the royal arms, as the natural species of this thistle. It is a heraldic, not a botanical species. It would be, most probably, no less vain to inquire which

is the true botanical species of the English rose, the Irish shamrock, or the French fleur-de-lis.

Let not vegetables of a still humbler order be overlooked. In these peat originates, a substance of great value in many parts of our own and other countries, as a fuel. The alternations of peat with sand and gravel occur on sea-shores, at the estuaries of rivers, or their termination in lakes, or in other situations where large quantities of these materials are carried down by rivers, so as for a time to cover the plain, and destroy the process of vegetation.

The term "mountain peat" is not confined to those deposits which are found on the sides of mountains, but includes all produced in situations where the drainage is considerable. In the highlands and islands of Scotland, though seldom more than one or two feet in thickness, and generally not exceeding a few inches, it covers an amazing extent of country. Forest peat is supposed to have had its origin in forests, in fact, from the decayed trunks, branches and roots of timber trees. Marsh peat is very abundant. When a bog is drained this variety is produced; but it more generally appears as a bed of vegetable roots, chiefly those of the rushes and grasses, retaining much of the firmness which they have when living. Lake peat is produced



JUNE.

in a lake, and formed of a different species of plants.

In the shallow parts of a lake, as is generally known, a number of aquatic plants flourish, many of them lifting up their heads above the surface of the water, and displaying their gaudy petals. The annual growth and decay of these, form, in connexion with the animal and mineral matter collected around them, a constantly increasing bed. So rapid is the accumulation in some instances, that we may actually observe the filling up of the lake; and we may sometimes tread with safety, or see crowned with a plenteous harvest, the spot which our grandsires remember to have been covered with water.

It is not intended by these statements, that the mere decomposition of grasses and rushes can effect this change in the course of a few years. But, wherever these are growing, they arrest the progress of much earthy matter, that would otherwise be carried into the deeper parts of the lake. The mere decomposition of plants would, however, produce, before a long period had elapsed, a bed of considerable thickness. There are certain plants, called by botanists perennial, that, after yielding their blossoms, suffer a decay of the lower extremities of the roots, but the

upper portions send forth new shoots, and at the appointed time new flowers are produced, so that they may not be inappropriately called perpetual. Such plants, annually renovated, are peculiarly adapted for the formation of peat, whether in marshes, lakes, or on the margin of the sea.

Rapidly as peat is formed in some places, it is in others exceedingly slow. A few years since, the palings of a park described by our old English writer Camden, were found several feet beneath the surface of that moss over which the Manchester and Liverpool railroad now runs. Roman coins and utensils are not unfrequently discovered in the English peat beds. Peat beds are sometimes found resting on solid rocks, and in such situations the accumulation has been very gradual, especially during that period when the lichens and mosses were, by their annual growth and decay, forming a soil for the more abundant production of their species.

Among the chief beauties of the garden this month, are the lily, and the queen of flowers, the rose. The rose is yearly gaining more favour among florists, in proportion to the varieties, now amounting to above one thousand, that have been produced by culture. The changes are in the form, the size, the colour, and the number of petals. Linnæus and his followers are of

opinion that all double flowers are monsters. But the term is surely unhappy, for whatever is monstrous is likely to excite disagreeable rather than pleasant feelings. There can be no doubt, too, that double flowers are more beautiful than single ones, of which the common double moss-rose is a well-known example. The wild rose, unaltered by culture, has only five petals, with many stamens; their yellow anthers filling the space between the base of the petals and the pistil. In the double roses, the number of petals, instead of being five, is indefinite; these occupying the place of the stamens in the single rose.

The common cabbage rose has been called the hundred-leaved rose from the time of Pliny, nearly two thousand years ago, it appears from the notion of there being one hundred petals in each rose. It is not known among gardeners, what is the cause of the multiplication of the petals in double roses and other double flowers; but all double flowers are at first procured from seed, and never, so far as is known, from cultivating the roots of single flowering varieties. On the contrary, however, double flowering plants sometimes come to blow single, from being grown in poor soil, or neglect in that transplantation, which is indispensable to keep roses in the best state for flowering.

The most uncommon colour among roses is yellow, though the yellow roses are not varieties, but distinct species. So difficult are they to manage, in our climate, that they do not usually blossom well; they need to be attended to with great skill. Neither this nor any of the sorts of roses thrive well near towns, probably because of the smoke.

Roses differ almost as much in smell as in colour. Some have their peculiar odour in a high degree, while in others it is scarcely distinguishable. It is the petals of the rose which give off the fine aroma; while in many other flowers the petals are scentless, and the odour arises from the anthers or the nectaries. This is probably the case with the white lily, as well as the poet's lily, which is usually called the white lily in Scotland. The tall white lily of the English gardens has a blossom in the form of the orange lily, with petals as large or larger, while the anthers are large, and of a golden yellow colour. The scent of this flower is very agreeable, but for some persons it is often too powerful.

The nature of the scent of flowers is not well understood. It arises, doubtless, from very minute particles diffused from the flower through the air, and thence conveyed to the organ of smell. The extreme fineness

LILY OF THE VALLEY.

of the particles is proved by the fact, that a piece of musk, diffusing for years its perfume, does not lose anything considerable of its weight.



LILY OF THE VALLEY.

One of the most commonly-cultivated garden-flowers in bloom this month is the Greek valerian, very often called Jacob's ladder, probably from the regular ladder-like steps of the winged leaves. It is a native of this

country, but is rarely to be met with in a wild state, no doubt because when it is found the roots are so frequently transplanted into gardens. One was observed near Buxton, in Derbyshire, the flower being of a colour not seen in gardens. It was of a rich purplish blue, somewhat like that of the sweet violet, but not quite so dark. The garden varieties are more purely blue, without any shade of purple, though they vary very much in the depth of the colour; and some are pure white.

One point of difference between plants and animals may here be noticed; the latter can travel about in search of food. Even the sluggish oyster can shift its position on its native rock. Not so the plant, which is rooted in a particular spot. In addition to this, as on digesting its food taken up from the soil it rejects what is unsuitable, so from the increase of this about its roots the soil becomes less and less fitted for its support.

In the laws that regulate the physical world, however, wherever there is a want, a supply is provided by the great Creator. And interesting indeed are the means provided for the nourishment of plants. Observe, for instance, the strawberry. No sooner is its root established, either from seed or a planted offset,

STRAWBERRY PLANTS.

or even from a runner spontaneously fixing itself, than it begins to feed on the plant-food of the soil, and to fill it up with what it rejects. But immediately the means appear for obviating the disadvantage. The root cannot remove of its own accord from the spot, but shoots spring and go off in all directions round



THE STRAWBERRY PLANT SENDING FORTH SHOOTS.

the root, in quest of fresh soil. Strawberries are usually said to be biennial, or, rather, triennial, in

bearing fruit. But this is probably a mistake, arising from the rapidity with which they corrupt and exhaust the soil. The crown which bears fruit is, probably, annual, and it is only the new crowns formed by the side of this that produce the second and third year's crop. It is remarkable that not only the old plants send off runners, but even the young plants on the runners themselves begin, sometimes before they are rooted, to send off runners also, as if they could not otherwise escape far enough from the mother plant.

Another instance of this kind occurs in the violet, which is here mentioned because practical gardeners have lately found it to be a great improvement in planting some species, to wash the roots clean, instead of taking them up laden with balls of earth. When the roots are removed with the earth about them, the gardener washes away the deteriorated soil, probably without being aware of the principle of deterioration. In consequence of this they flourish when otherwise they would not; and it is not improbable that the same method of washing the old strawberry roots and re-planting them, instead of throwing them away, would prove equally successful. It might also be applied to other species of plants which show a rapid corruption and exhaustion of the soil by sending off runners.

TREES.

On comparing the annual species of violets, which, by an admirable mechanism, project their seeds to a considerable distance—with the perennial species, which diffuse themselves by creeping runners—nothing is more remarkable than the difference between them on shedding their ripe seeds. The latter have not the means of scattering their seeds to a distance. The seed-pod, indeed, has its valves, like those of the other, but they do not collapse on the ripe seed; nor have they the means of elevating the seed-pod. Moreover, the first flowers of the creeping violets, so much admired for their fragrance, are rarely productive of seed at all; and it is only the flowers which are produced in summer, nearly without petals, and rarely seen or remarked, that are succeeded by seeds; perhaps, because in very hot, dry weather the whole plants, runners and all, being very liable to wither up and perish, the seeds are only then providentially produced, that the species may not be altogether lost. How worthy are such facts of remembrance!

Is it said, But what becomes of plants that do not creep? Other means are provided. Let us take an instance from the several sorts of trees. When one of these finds the soil so corrupt that the root-fibres can no longer supply the demand of the leaves and

SIGHTS IN SUMMER.

young shoots for sap, it endeavours to escape from the place where it grows. Not that this can be done by self-removal, but by sending up from the roots suckers that may push their roots beyond the soil that has become contaminated. No healthy young tree, of the orchard or the forest, will push suckers so long as the soil is fresh and rich. But look at an old plum or pear tree in the orchard, a decaying currant or rose-bush that has stood for years in a border, or a lilac or syringa in the shrubbery, and the suckers around them will tell how ill they relish the old soil, and what efforts they have made to obtain better nutriment. Practical cultivators have long been aware of these facts; but not of their causes. The importance is obvious of their digging in as much rich compost or fresh soil as possible around the roots of all trees and bushes, to prevent their sending off suckers. Were it possible, indeed, to renew the soil, every two or three years, the suckers might, perhaps, be entirely prevented, while the trees might thus be kept in very superior health and growth.

Some trees there are that do not send up suckers readily. Thus, the slow-growing sorts, as the oak, the walnut, and the mulberry, do not rapidly exhaust the soil. They continue, therefore, in healthy growth

for many years, annually extending their roots over a comparatively limited space, while the great masses of leaves which they shed every autumn decay and form a rich natural top-dressing for the soil.

And here let us say a word for botany—a most interesting and valuable science. To divide plants into genera, by fixing on some characteristic mark of distinction, and to collect these genera into groups or orders, according to their points of mutual resemblance, are the chief objects of a systematic botanist. These marks must be sought for in the seed, or in those parts which tend to its production. These parts taken together are known under the general name of a flower; but, in various instances, as in moss, lichens, and sea weed, though there are parts conducive to the defence and preservation of the seed, yet they do not seem to have the most distant resemblance to the divisions of a blossom. But the magnifier has been called to the aid of the unassisted eye, and the organs which provide a lodgment and decoration for the seed supply the tokens by which the plants may be arranged.

The science may appear intricate and abstruse, but the pains taken at first have the double advantage of saving the observer from disappointed toil afterwards, and of giving quickness to the eye by directing the

judgment. We should not regret a little trouble when we consider the benefits accruing from effort, and from this kind of exertion in particular. A person knowing nothing of botany might traverse a country without finding anything worthy of notice; but acquaint-



WATER BIRDS—THE DUCK.

ted with this science, a walk of a few yards will present him with something to interest and improve the mind.

THE WATER-RAT.

If now we take a glance at the waters, several species of duck-weed will be found spread in sheets of green over the liquid they hide, so closely are their small glossy green leaves compacted side by side together. Look, too, at the surface of that stream, profusely covered as it is with the broad leaves of the water-lily. Of this there are two species: one white, the other yellow; the large flowers of the former are very elegant. Observe, too, that little creature swimming in the clear water. It is the water-newt or eft; perfectly harmless, though considered venomous by the ignorant. Another semi-aquatic animal may now be seen very busy; it is the water-rat. Unlike the rat which is so destructive, and which also frequents the banks of canals, rivulets, and ditches, it does not belong to the same genus. The water-rat, except in the structure of its tail, is a miniature representation of the beaver. Its food consists entirely of roots and aquatic plants, it swims and dives very adroitly, and excavates deep burrows in the bank. In one of these, near the water and at a considerable depth, the female makes her nest. Evening is the time in which this cautious animal steals forth to delight in its activity, and it continues alert during the night.

If in the habits of other creatures you take more

pleasure, mark that little bird on the stone jutting out in the middle of the rapid stream. It is the water-ouzel. See how it suddenly dips down its head, and jerks its short erect tail. There! it has plunged into the water, and is out of sight. Again it makes its appearance, and will soon dive again if it be not disturbed. There, too, flies its mate, a sure proof that its nest is near; but, unless we watch the pair to their home we shall never find it. They are in quest of food for their nestlings, that they so often plunge beneath the water. This consists of the caterpillars of aquatic insects, and the fry of minnows and other small fish.

There flits another tenant of the river; rapid and direct in its flight as an arrow, and glancing as it passes, like burnished metal in the sun. It is the king-fisher, also a diver in the pursuit of prey. This consists almost entirely of small fish, which it takes as they rise near the surface, and carries to some favourite perching-place, there to be eaten or taken to its young. Often has this bird attracted the eye of the passenger from its splendid garments. A poet has said—

“ The halcyon flew across the stream,
And the silver brooklet caught the gleam,
The glittering flush of his dazzling wings
Was such as the gorgeous rainbow flings.”

SWARMING OF BEES.

And here are other objects :—

“ Waked by his warmer ray, the reptile young
Come winged abroad; by the light air upborne,
Lighter, and full of soul. From every chink
And secret corner, where they slept away
The wintry storms; or rising from their tombs
To higher life; by myriads, forth at once,
Swarming they pour; of all their varied hues,
Their beauty-beaming parent can disclose.
Ten thousand forms, ten thousand different tribes,
People the blaze.

The breeding of young bees commences as early as February, and a hive, however thinned by the previous winter, becomes, when circumstances are commonly favourable, crowded to excess in Midsummer. Besides the developed bees, eggs abound, and young ones not matured. What then occurs to relieve the pressure? Guided by an admirable instinct, the queen bee, the proper mother of at least the great body of the hive, resolves on departure with a swarm. Various causes contribute to this result, all of which are worthy of an observer's consideration.



THE QUEEN BEE

A period of from seven to nine days elapses from

SIGHTS IN SUMMER.

the time of the first colony being led forth by the old queen, until the next swarm is conducted by the first young queen who is set at liberty. The interval between the second and third is still shorter; and the fourth sometimes departs the day after the third. In hives left to themselves, fifteen or eighteen days are usually sufficient for throwing off the four swarms, if the weather continues favourable.

A swarm is never seen except when the sun shines, and the air is calm. There may be in the hive agitation and disorder, in fact, all the precursors of swarming, but should a cloud pass over the sun, all is still and the attempt is deferred. If, however, the sun again appears, even an hour afterwards, the tumult is renewed, it is rapidly augmented, and the swarm departs.

When a swarm has settled on some bush or tree, the first step towards lodging a swarm in a new hive, is the capture of the queen. As bees are less disposed to sting at this than other times, they may be handled if a strong glove be worn. But should they settle on any person who may be near, presence of mind is absolutely necessary to the preservation of life. The first object of the bees is to clear out the new hive thoroughly, if not before done, to block up all its chinks, to smooth any projecting parts, and to

lay a stable foundation for the future works of the interior.

As we look, we are reminded of the poet's words:—

“ For me, 'tis time to pray, that men regard
 Their occupations with an honest heart,
 And cheerful diligence; like the useful bee,
 To gather for the hive not sweets alone,
 But wax and each material; pleased to find
 Whate'er may soothe distress and raise the fallen.”

“ As we have opportunity, then, let us do good unto all men, especially to them that are of the household of faith.”

Other insects are busily at work. Look on the leaves of brambles and dandelions, and various zig-zag lines may be perceived; what, then, are they? They are the work of insects which remove the pulpy substance of the leaf, and thus make labyrinths in which to dwell. Convenient habitations are also formed of the leaves of different plants brought into a proper state by means of silken cords. One of these may be found in our hedge-rows, resembling in shape a small roll. How skilfully does the rose-leaf-cutter bee cut out the materials of her nest! Tents are also formed, composed of silk, which the inmate spins, almost as soon as it issues from the egg, and enlarges by splitting it in two, and inserting a strip of new materials. It is kept

SIGHTS IN SUMMER.

erect by fastening silken threads from a swelling at the base to the surrounding surface of the leaf, and further steadied by the air being drawn out, by the little creature hastily retreating, if alarmed, up his warm case, which it completely fills. A volume might be filled with facts of this kind; but an insect of a different



ROSE-LEAF-CUTTER BEE.

kind must not pass without notice. The gall-fly pierces the tender leaves of the oak, and quickly a commodious dwelling springs up. Such are the substances called galls, of which there are many kinds.

SHEEP-WASHING.

Now the grazier shows his care for his sheep, and clears the ground of thorns, furze, and briars. Sheep-



OAK GALLS.

washing has already taken place. No description of the process can be more graphic than that of Thomson:—

“ By men, and boys, and dogs,
Compell'd, to where that mazy-running brook
Forms a deep pool ; this bank abrupt and high,
And that far spreading in a pebbled shore.

SIGHTS IN SUMMER.

Urged to the giddy brink ; much is the toil,
The clamour much of men, and boys, and dogs,
Ere the soft fearful people to the flood
Commit their woolly sides. And oft the swain,
On some impatient seizing, hurls them in ;
Embolden'd then, nor hesitating more,
Fast, fast they plunge amid the flashing wave,
And, panting, labour to the farthest shore.
Repeated this, till deep the well-wash'd fleece
Has drunk the flood, and from his lively haunt
The trout is banish'd by the sordid stream ;
Heavy, and dripping, to the breezy brow
Slow move the harmless race ; where, as they spread
Their swelling treasures to the sunny ray,
Iuly disturb'd, and wondering what this wild
Outrageous tumult means ; their loud complaints
The country fill, and, toss'd from rock to rock.
Incessant bleatings run around the hills.

Not less happy is the description which the same
poet gives of shearing the sheep.

' At last, of snowy white, the gathered flocks
Are in the wattled pen innumeros prest :
Head above head, and rang'd in lusty rows,
The shepherds sit, and whet the sounding shears ;
Meanwhile, their joyous task goes on apace.
Some mingling stir the melted tar ; and some
Deep on the new-shorn vagrant's heaving side,
To stamp his master's cypher ready stand ;
Others the unwilling wether drag along ;
And, glorying in his might, the sturdy boy
Holds by the twisted horns the indignant ram.
Behold, where bound, and of his robes bereft
By needy man, that all-depending lord,
How meek, how patient, the mild creature lies !
What softness in its melancholy face !
What dumb, complaining innocence appears !

SHEEP-SHEARING.

Fear not, ye gentle tribes, 'tis not the knife
Of horrid slaughter, that is o'er you waved;
No, 'tis the tender swain's well-guided shears,
Who having now, to pay his annual care,
Borrow'd your fleece, to you a cumbrous load,
Will send you bounding to your hills again."

A pleasing instance of the power of instinct may also be observed. While the ewes are being shorn, the lambs are kept in separate folds; but when permitted again to meet there is a quick recognition. The mother bleats when escaped from the shears, and the lamb, uttering its response, skips forward; it may be startled at first by her strange appearance, but in a moment her repeated cry and well-known smell have chased all doubt, and the gambol of the lamb is the token of its inward glee.

" 'Tis summer, 'tis summer,—the wild birds are singing,
The woods and the glens with their sweet notes are ringing;
The skies are all glowing with crimson and gold,
And the trees their bright blossoms begin to unfold.
The cushat is breathing his murmurs of love,
The stars are adorning the blue skies above,
While the moon in her beauty is shining on high,
And soothing the heart, while she pleases the eye.

" 'Tis summer, 'tis summer—and winter no more
Is heard in the winds, or the ocean's wild roar;
But so calm are the waves over all the great deep,
That their murmurs might lull a young infant to sleep;
The streamlets are gliding all lovely and calm,
And the zephyrs come laden with fragrance and balm;

SIGHTS IN SUMMER.

Then oh ! let us bow to the Merciful Power,
Who lives in the sun-beam, the tree, and the flower;
Who stills the wild tempest, and bids the vast sea
Unruffled and calm as a placid lake be.
Let us bow to that God who gave summer its birth,
And who scatters his treasures all over the earth."



JULY.

JULY.



“ Bright Summer beams along the sky,
And paints the glowing year ;
Where'er we turn the raptured eye
Her splendid tints appear.

“ Then, when so fit to lift the song
To gratitude and heaven,
To whom her purple charms belong,
From whom those charms are given ?

“ Thee, Thee, Almighty King of kings,
Man worships not alone,
Each budding flower its incense brings,
And wafts it to thy throne.”

HUNT.

JULY generally opens upon us in all the light and heat of summer. Well might the poet speak of this season in glowing terms, and blend with his strains, referring to its richness, beauty, and melody, the praises of that God to whom we must trace them all.

As yet, in some places, the mower has not stripped the flowery meadow of its glory ; nor have the myriads

SIGHTS IN SUMMER.

of green leaves, which present to the eye so cheering an aspect, been scorched by the summer's most intense



FLOWERS OF TREES.

1. Oak.
2. Hazel.

3. Horse Chesnut.
4. Willow.
7. Poplar.

5. Elm.
6. Sycamore.

heat; nor do they show signs of that decay which, mournfully, but certainly, succeeds to maturity. Still, therefore, we gaze on the rich foliage of nature, while

the flowers of trees, as they appear at different times, should not be suffered to pass without notice.

Rich indeed is the botanist at this season of the year ! Though humble be his station, knowledge gives him a property in every flower that meets his eye. The book daily spread before him, is one where he

“ May read and read,
And read again, and still find something new,
Something to please, and something to instruct,
E'en in the noisome weed.”

Sometimes flowers are associated in our minds with some pleasing time or event in our past lives. But, however that may be, when we once know a flower, our acquaintance is formed for life, and is confirmed by every fresh interview. The flowers of the last month are greatly increased by those of this. Candy-tufts, catchfly, columbines, egg-plants, French marigolds, veronicas, tuberoses, and many more, appear in the gayest beauty of the season. Nor should we dwell merely on the more splendid of floral productions ; not a few of humble grade ask our observation and acquaintance. Watching by the sandy hedge-bank, for example, we may admire the beauty of the sky-blue flowers of the little speedwell, which last for a considerable time. If we cross a shallow running stream,

SIGHTS IN SUMMER.

the brooklime will catch the eye, remarkable for its bright green leaves and blue flowers. And by the



WOODRUFF.

river side we may find in abundance the forget-me-not, with its azure flowers. This plant, if taken up with a little earth, and placed in a pot standing in water, will thrive in almost any situation. And in the deep shade of the wood, we meet with the humble woodruff, with its flowers of snowy white. The leaves surround the stem, standing out like the rowels of a spur, and the plant is sometimes called, from this circumstance, the wood-rowel. Often has the botanist placed a few sprigs of it in his waistcoat pocket, knowing that, if taken care of, for months, and even years, it will give out a grateful odour, like the sweetest hay.

As July advances in its course, the heat often becomes very oppressive from the length of the days. Those who can avoid labour, enjoy, therefore, as much rest and shade as possible. There is, indeed, a sense of heat and quiet all over nature. The very birds are silent. The little brooks are dried up. The earth is chapped with parching. The shadows of the trees are particularly grateful, heavy, and still. The oaks, which are freshest, because latest in leaf, form noble clumpy canopies. To him who lies under them, they appear of a strong and deep green against the blue sky. The traveller who cannot enjoy this luxury, asks for the nearest road, and cuts across the country, through

SIGHTS IN SUMMER.

the fields and leafy lanes. Violent exertion is exceedingly trying. The cattle, oppressed by the heat, seek the grateful shade.

“ On the grassy bank
Some ruminating lie ; while others stand
Half in the flood, and often bending sip
The circling surface. In the middle droops
The strong laborious ox, of honest front,
Which incomposed he shakes ; and from his sides
The troublous insect lashes with his tail.”

Sometimes all that is audible now, increasing rather than lessening the sense of quiet by its gentle contrast, is the sound of insects. Here and there the bee sweeps across the ear with his gravest tone. The gnats, as Spenser says,

“ Their murmuring small trumpets sounden wide ; ”

and now and then a note is emitted by the little musician of the grass. For,

“ When all the birds are faint with the hot sun,
And hide in cooling trees, a voice will run
From hedge to hedge about the new-mown mead ;
That is the grasshopper's.”

Fruits begin to abound, and are more noticed as they are made more necessary and agreeable by the summer heat. Cherries offer their ever-grateful juice. Strawberries are in their greatest quantity and perfection. No vegetable production of the colder latitudes, or

FRUITS.

which can be ripened there without artificial heat, is at all comparable with this one in point of flavour. If the soil and situation be properly adapted to it, the more cold the climate, indeed the more bleak and elevated,



THE STRAWBERRY.

the more delicious is the berry. This fruit can only be had in perfection when taken from the plants, and in dry weather, for a very slight shower will render them comparatively flavourless.

The raspberry owes its name to the rough and bristly appearance of the fruit. The red and the white prefer spots that are shaded and rather moist, and are

both inhabitants of Britain. The flavour of raspberries is peculiarly fleeting: they should be eaten from the bush, and even there it does not continue above two or three days after they are ripe.

Currants appear in graceful bunches. The red is found growing naturally in many places both in England and Scotland; and the white is merely a variety of the red. The flavour of the latter is the most delicate. In those parts of our land where it is the custom to train the currant against the walls of the house, its rich dark leaves and brilliant fruit growing over the latticed window, present to the eye a pleasing picture. The berries of the black currant are larger than those of the red and white, but they are not so juicy, the taste is peculiar, and the crop on a single bush is less abundant.

The gooseberry, if not a native of Britain, is better adapted to cold than to warm climates. Its flavour here is very inferior to that it has in Scotland; and the gooseberries of Dundee or Inverness far surpass those carefully produced in the neighbourhood of Edinburgh. The green are generally inferior to the yellow, and even to the white. The red are very various in flavour, but are commonly more acid than the others. The same remark may be made of most other fruits;

and it accords with the fact, that acids change the vegetable blues to red.

An interesting process may here be noticed; it is that of grafting—a practice of great antiquity. For this purpose the person about to graft takes a scion, or branch, of the tree which he wishes to propagate, and having cut off the top from the growing stock of another, applies the former to the latter, and binds them firmly together. Thus, if a tree becomes old, but has healthy and vigorous roots, and it is thought desirable to renew or improve its fruitful qualities, it is cut off across the lower part of the stem, and forms the stock on which scions are grafted, which scions, taking root, become, in time, the fruit-bearing branches of the tree.

As a general principle, the sorts to be united require to be considerably alike as to their woody fibre, sap, and pulp vessels, so that no decided interruption may take place in the ascent or descent of the juices. Yet, to effect improvement, there must be a certain difference between the varieties. Thus, the wild apple tree, bearing crabs too sour to be eaten, forms one of the best stocks on which a graft can be made, and for that reason alone it is grown by nurserymen from seeds. When, too, pears are grafted or budded on the wild

species, plums on plums, and peaches on peaches or almonds, the scion is, in regard to fertility, exactly in the same state as if it had not been grafted at all; while, on the other hand, a great increase of fertility arises from grafting pears on quinces, peaches on plums, apples on whitethorn. In these latter cases, the food absorbed from the earth by the root of the stock is communicated slowly and unwillingly to the scion. Under no circumstance is the communication between the one and the other as free and perfect as if their natures had been more nearly the same. The sap is impeded in its ascent, and the proper juices are impeded in their descent, whence arises that increase of secretion which is sure to produce increased fertility. Grafting is performed in two principal ways, scion or slip grafting, and grafting by approach, or in-arching, both of which are worthy of attention.

Let us not pass from this curious and useful operation without dwelling on the interesting and pious observations suggested by it, in Paterson's Manse Garden:—

“It cannot be unworthy of remark, that a phenomenon so striking as that of the mountain ash, bearing, instead of its own little sour and unwholesome berries, large, sweet, and nutritious pears, in consequence of engrafting,

has given rise to a scriptural metaphor, most expressive of a like change in our moral nature, one that is as true, in point of fact, as certainly accomplished by appointed means, and as beneficial in its effects, comparing the fruits of the old nature with those of the new. It becomes not immortal beings to admire the one mystery, and to overlook the other. It becomes not me to tell a fellow-creature the remarkable art by which his trees may become fruitful, without reminding him that he is himself a tree to be engrafted; and it becomes neither me nor him to study the fruits which we shall gather, without considering the fruits which we bear. May we, who are gardeners in the Lord's vineyard, be wise in the heavenly art, as well as in the earthly; that we may see around us the blossoms and fruit of the engrafted word, which is able to save the soul; and may we give ourselves earnestly to the work, lest the Lord of our vineyard cut down our trees, because, when he came and sought fruit thereon, he found none."

Another of the pleasing employments of the season is haymaking. When the sun is high and warm, the haymakers succeed the mowers. It is amusing sometimes to watch what "a turning out" there is of the inhabitants of a village. Old men and women join

SIGHTS IN SUMMER.

the throng; the rustics in all the activity of maturity go forth, and numbers of the little folk follow in their wake. Now some pass off to the first field of labour, others walk on to that appointed for them, and at length all are at work. The various processes are thus passed through, till the hay is properly made, and this valuable produce of the field secured in the stack.

Living creatures, of almost every kind, are now partaking their share of the joy that abounds. About



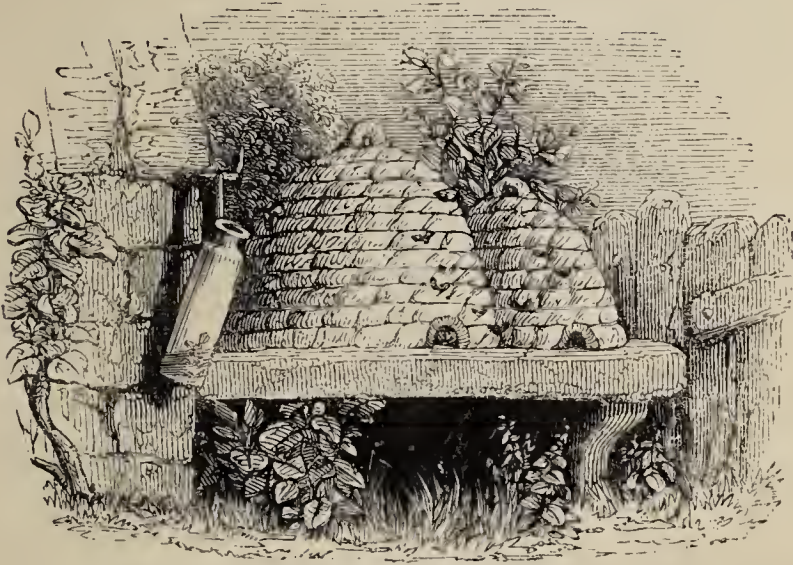
VARIOUS INSECTS

two hours after midnight, before the nightingale has concluded his song, up springs the lark, as if the night,

SUMMER INSECTS.

short as it is, were too long, although, throughout the live-long day it soars aloft, and pours forth so richly and variously its thrilling music. The cuckoo, too, rises before the sun, and makes the valleys echo with its simple, yet welcome note ; and as soon as the sun rises myriads of creatures are aroused to life and enjoyment.

Butterflies, in rich attire, are fluttering over the fields, or hovering about the blossoms and flowers. The



bees are all at work, collecting honey from the nectaries, and burying themselves in the petals to obtain the liquid sweets within. It is amusing to watch them

SIGHTS IN SUMMER.

while thus engaged, passing rapidly from flower to flower. How quickly do they leave those they have robbed! How eagerly do they extract the honey from such as yield a supply! Traversing, in this pursuit, the fields and gardens, and wandering far from home, they return with their honey-bag filled, and again go forth on the same errand.

There, too, is the dragon-fly, sweeping over the surface of the water, from which it has recently emerged on light, gauze-like wings. Most remarkable is its



THE DRAGON-FLY.

history. It begins life as an aquatic caterpillar, which is very remarkable for the mode in which it propels itself along, without the aid of its external members. Appended to the hinder part of the body are certain leaf-like parts, and these it alternately opens and

THE GNAT.

closes, taking into a cavity at their base a portion of water, and instantly ejecting it with considerable force. Thus, the caterpillar is propelled along, on the same principle as that by which a rocket rises in the air. Ingenious attempts have been made to apply this mode of propulsion to ships, by means of steam acting on machinery. The object was to throw out a continued volume of water at the stern of the vessel; but, as in many other cases, art has failed to imitate the simple yet effective mechanism of nature.

Myriads of gnats are dancing in clustered squadrons at this season of the year, when the coolness of the evening tempts them from their leafy retreats. These insects are also aquatic in their caterpillar state, and abound in stagnant waters. They may be easily examined in a watch-glass of pure water, by a common magnifying lens. The figure of this creature is very curious; and its movements with the head downwards are singularly quick and active. Its adaptation to its circumstances will be found complete.

How simple, yet how perfect, are all the operations of our Creator! How forcibly do they appeal to the mind in proof of his attributes! Here is a gnat—an insignificant and contemptible insect, the thoughtless world call it—a proof that all things are made in

wisdom, and that even in the humblest insect a lesson may be learned on the perfections of God. Can, then, the gnat be reflected on by the Christian without grateful adoration to Him, who manifests his care for the meanest creature he has called into being, and thus gives an assurance, made a thousand-fold more clear by his word, that all who trust in Him are the objects of his special regard and benevolence?

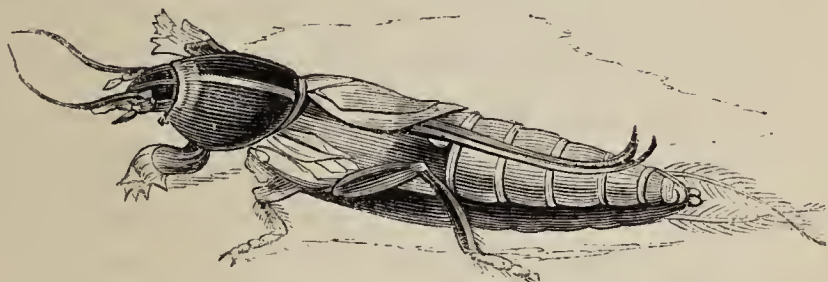
In osier holts may be found one of the largest and most beautiful of our beetles. And here the observer may be recommended to smell the insects he takes. There is scarcely a scent odious or agreeable that may not be met with in the insect world. The rose-scented capricorn, or musk-beetle, for instance, has long been noted for the delicious odour it emits. This is so powerful as to fill a whole apartment, and the insect retains it long after its death. Another species of the same genus has, in a high degree, a scent resembling that of the cedar on which they feed.

Listen, and you may often hear the shrill noise of the field-cricket. "Sounds," says White of Selborne, "do not always give us pleasure according to their sweetness and melody; nor do harsh sounds always displease. Thus, the shrilling of the field-cricket, though sharp and stridulous, yet marvellously delights

THE MOLE CRICKET.

some hearers, filling their minds with a train of summer ideas of everything that is rural, verdurous, and joyous." One of these insects when confined in a paper cage and set in the sun, and supplied with plants moistened with water, will feed and thrive, and become, perhaps, too merry and loud for a person who is sitting in the same room.

The mole-cricket is a singular creature. It burrows



THE MOLE-CRICKET.

under ground, and devours the roots of plants, thus causing them to wither. A black ground beetle devours its eggs. To defend them the female places herself at the entrance of the nest, which is a neatly-smoothed and rounded chamber, protected by labyrinths, ditches and ramparts; and whenever the beetle attempts to seize its prey, she catches it and bites

it asunder. For moving the prodigious arms of this creature a very powerful and peculiar apparatus is provided.

There, too, are the grasshoppers, that we hear on every sunny bank, and which make every heath vocal. They begin their song, which is a short chirp regularly interrupted, long before sun-rise. In the heat of the day it is intermitted, and resumed in the evening. The Cicadæ—called *Tettix* by the ancient Greeks, by whom they were often kept in cages for the sake of their song—seem to have been the favourites of every Grecian bard. Supposed to be perfectly harmless, and to live only on the dew, they were ever addressed by endearing epithets. Anacreon welcomes the Cicadæ as “the sweet prophets of the summer.” So attached were the Athenians to these insects, that they were accustomed to fasten golden images of them in their hair.

It appears, therefore, that the Cicadæ of Greece must have been musical. No harsh and deafening note could have obtained for it so much admiration. The sound of this insect and of the harp, were called, indeed, by one and the same name. A Cicada sitting on a harp was a usual emblem of the science of music. Two rival musicians, it is said, were contending on that instrument, when a Cicada flying to one of them

and sitting on his harp, supplied the place of a broken string, and so secured to him the victory. To excel this insect in singing seems to have been the highest commendation of a singer ; and even the eloquence of Plato was not thought to suffer by a comparison with it.

Entomology, the science of insects, has its interesting pursuits and rewards like Botany, the science of plants. This, therefore, should the young be encouraged to study. The surface of a country consists of mountains, hills, and valleys, or of plains. It is diversified by forest, wood, or copse, and watered by rivers, rivulets, lakes, and pools. Those parts that are not clothed with wood, are either open or inclosed, forming grassy downs, heaths, pastures, meadows, morasses, and arable land. The soil, also, is equally various : clay, loam, marl, chalk, vegetable mould, moor, sand, and other substances appear.

The mountains and hills are either covered with a bed of soil, or are rocky and bare ; the arable lands are divided by living or dead fences, formed of various materials, or else they are open, the property being marked by grassy balks. All these places abound with plants ; and these, as opportunity serves, the entomologist should explore. Still further, he must look also

to the sea, and its sandy, pebbly, or rocky shores, and the sea wrack that is cast upon them; the estuaries that receive its tides; and the brackish waters and saline marshes in its vicinity.

Nor should it be forgotten that the earth itself, as well as the objects on its surface, the creatures in its waters, and the orbs of the firmament, deserves our attention. Of great value, for instance, is the blue limestone, which is generally of a dark dove colour, and of a dull earthy aspect. It forms occasional beds in the transition and mountain limestone deposits, but constitutes nearly the whole of the lias limestone. This latter is one of the most remarkable of the English strata. Its name is supposed to be owing to a provincial corruption of the word layers, used by the workmen to denote those partings into which many of its shales are liable to divide.

The lias, like the oolite—so called from the Greek words for an egg and a stone, because it is formed of small egg-like grains like the roe of a fish—forms a belt extending across our island from its south-western to its north-eastern shores, from Lyme Regis, in Dorsetshire, to the north of Whitby, where it is lost beneath the moorlands of the Yorkshire coast. In its southward course it passes to the east of York, and crosses

the Humber near the junction of the Trent and Ouse ; thence it passes through the western edge of Lincolnshire, and traverses the counties of Nottingham, Leicester, Warwick, and Gloucester ; its breadth in this part of its course being pretty uniformly about six miles. Hence, the main body proceeds, in nearly a southerly direction, through Somersetshire to the coast of Dorset, while a broken line of the same skirts along the southern shore of the Bristol channel as far as Watchet, and appears on the northern shore in detached patches in the counties of Monmouth and Glamorgan. The entire thickness of this deposit is perhaps about two hundred and fifty feet.

Objects such as these should, therefore, be examined, especially when it is remembered that we owe so many of our advantages as a nation to the physical character of our island. Not only does it yield us stores of metals and of ores, of limestones and of sandstones, of salts and of minerals, and, above all, of coal, but most of them are placed in situations and under circumstances best calculated to render them beneficial. At periods far remote, the Carthaginians and Phœnicians traded with our ancestors for lead and tin, and, up to the present time, countries far distant from our own and each other, owe to us many of their advantages. Had these

resources been less amply or less favourably bestowed, we should have been deficient in the supply of our own necessities, and unable to relieve the wants of others.

“If,” says Mr. G. F. Richardson, “the granite of the Scottish mountains had extended as far as the South Downs of Kent and Sussex ; or if the chalk of our southern shores had reached to the Grampian hills, our social and commercial condition would have presented a dreary contrast to the scene of energy, enterprise, and wealth which it now presents. If, on the other hand, the granite had prevailed throughout the entire island, we should have been placed in a country, picturesque, it is true, in its general outline, abounding in the alternations of mountain and of vale ; of hill and of glen ; relieved by the torrent, the waterfall, and the lake ; and embellished with a profuse, though monotonous vegetation ; while the rocks beneath would have afforded occasional supplies of precious metals, and yielded veins of tin, copper, silver, and gold : but the climate would have been severe ; its productions limited and few ; its population scanty, scattered, and poor ; and we should have continued a race of miners and mountaineers : or, on the other hand, had the chalk extended over the whole country, we should have possessed extensive pastures and sheep-walks, and

EVENING.

should have become a community of shepherds, grazing our flocks on the hills, and cultivating a confined and partial vegetation in the valleys and fissures of the chalk. In neither case should we have attained that prosperity and eminence which we now so happily enjoy; since we should have been destitute of those natural advantages, which constitute the basis of our national prosperity and power; and which, from the chalk of our southern shores, to the granitic formation of the north; from the South Downs of Sussex to the Grampian hills; and from the clay lands of the east to the metallic districts of the west; from the fields of Essex to the mines of Cornwall, yield a store of benefits, calculated not only to enrich ourselves, but to render us the dispensers of the best blessings to regions the most distant and remote."

To the days of summer our observations should not be limited. Well may we say :—

"Come, Evening, once again, season of peace,
Return, sweet Evening, and continue long!
Methinks I see thee in the streaky west,
With matron step slow-moving, while the night
Treads on thy sweeping train; one hand employed
In letting fall the curtain of repose
On bird and beast, the other charged for man,
With sweet oblivion of the cares of day:
Not sumptuously adorned, nor needing aid,
Like homely-featured Night, of clustering gems;

SIGHTS IN SUMMER.

A star or two, just twinkling on thy brow,
Suffices thee; save that the moon is thine,
No less than hers, not worn indeed so high
With ostentatious pageantry, but set
With modest grandeur in thy purple zone;
Resplendent less, but of an ampler round."

It is sometimes supposed that the female glow-worm alone is luminous, but many males have been taken having luminous segments.

And there are the stars; consult some work, and give them the attention they should not fail to receive. Many of great interest may be observed at this season of the year. And then the inquiries they suggest are calculated to inform and elevate the mind. What a view is thus furnished of the vastness of the universe! a view adapted deeply to affect us with the greatness of God, and our insignificance.



AUGUST

AUGUST.



' How sweet I've wandered bosom-deep in grain,
When Summer's mellowing pencil sweeps the shade
Of ripening tinges o'er the chequered plain :
Like tawny oat-lands with a yellow blade ;
And bearded corn like armies in parade ;
Beans lightly scorched, that still preserve their green ;
And nodding lands of wheat in bleachy brown
And streaking banks, where many a maid and clown
Contrast a sweetness to the rural scene,
Forming the little hay-cocks up and down
While o'er the face of nature softly swept
The lingering wind, mixing the brown and green,
So sweet that shepherds from their bowers have crept
And stood delighted musing o'er the scene."

CLARE.

LET us go again into the fields ; the wild-flowers will be found blooming around us. We may notice the sky-blue corn-flower, the scarlet pimpernel, the yellow goat's-beard, and the corn sow-thistle, with its large golden corolla, that folds at noon. Other wild plants may be observed, profusely scattered over the banks

and along the sides of the fields. The small bindweed is peculiarly graceful.

The meadow-saffron does not belong to the same genus as the common saffron, though the flower closely resembles it. In districts where it abounds, as in some parts of Suffolk, it renders the meadows very gay at this season, with its light purple flowers.



THE HEMLOCK.

Hemlock employed in medicine, but long known as a strong poison, is now in flower. As several plants are

often mistaken for it, a more particular description may be valuable. Hemlock grows on ditch banks, heaps of rubbish, and in uncultivated places, but is very local. It grows, for instance, on the north side of London, as in Copenhagen fields, but not on the south side. It is from three to four feet high, when the situation is suited to its growth, and is easily distinguishable from similar plants, by reddish-brown spots and streaks on the pale green stalk. The leaves are large, abundant, of a dark shining green, not very unlike the carrot, or uncurled parsley, with the ultimate divisions bluntly indented. The flowers are in large white umbels, with numerous spreading rays. They are all fertile, irregular without, regular within, and the petals heart-shaped. The fruit is almost spherical, marked with fine notched ridges, and smoothly streaked.

The goat's-beard is a plant with aggregate flowers, which is not uncommon on ditch-banks and in pastures, though it is seldom found in great numbers in one spot. It is remarkable for the flowers shutting up about mid-day, and hence it is often called in the country, "Go-to-bed-at-noon."

The sun-dew is an interesting little native plant, not uncommon in damp, peaty soils. It may be found on Hayes Common, in the neighbourhood of London.

SIGHTS IN SUMMER.

The leaves are small, brown, and spear-shaped, lying on the ground somewhat in the form of a star. The upper surface is studded with small glutinous glands, like minute dew-drops, whence the name. Another species of sun-dew, with larger leaves, is more common in some localities, as on the north-west shore of the Isle of Bute, than the preceding. Both are shy of expanding their flowers, which appear for that reason to be nearly always in the bud, and then hang in a graceful drooping position.

But the floral beauties of the fields now rapidly vary in character, from the increasing warmth of the weather. The fresh clear green of the leaves fades off, first into a dull dingy colour, and at length gradually passes into yellow of almost every shade.

When the little delicate wild flowers have at last withdrawn from the hot sun, the wastes, marshes, and woods are dressed in the luxuriant attire of ferns and heaths, with all their varieties of green, purple, and gold.

“ Banks

Need no embellishment of dew-fed flowers;
For weeds, almost as beautiful as they,
And, in the embalmed stillness of this hour,
Seeming to be endued with odorous breath,
Over the gliding stream hang motionless;
And the fair water-lily's broad green leaves
Are undulating there in fairy troops.”

THE FERN.



THE MALE SHIELD FERN.—(*Aspidium Felix-mas.*)

- a.* Root of a young plant, showing the convoluted form of a leaf-bud, previously to expansion,
- b.* Portion of one of its bipinnate or doubly winged fronds, or leaves.
- c.* Portion of a leaflet, showing on its under side the clusters of sporules, or seeds.

SIGHTS IN SUMMER.

Among the flowers which at this season appear in their best attire are the virgin's bower, the trumpet flower, and the passion flower.



THE PASSION FLOWER.

One of the prettiest flowers of the garden is the marvel of Peru. It is so called from the singular circumstance of its bearing, on the same root, flowers of very different colours. Some are wholly bright crimson, others yellowish buff, and others partly crimson and partly buff, in clouds, blotches, or streaks,

varying endlessly from no assignable cause but the constitution of the plant. Other instances of the same kind may, however, be found. In the common ten-weeks' stock, for example, it is not uncommon to see some flowers on the same plant scarlet, and others clouded and streaked with white, sometimes even nearly pure white, without streaks. In the garden heart's-ease the variety is much greater.

Leaves as well as flowers have their daily periods of changing their expansion, as may be observed in those of the acacia and scarlet-runner, the leaves closing up and partially drooping, much in the same way as those of the sensitive plant do when it is touched. The mechanism by which these changes are effected, has occasionally engaged the attention of the scientific; but they have not been able to arrive at any satisfactory conclusion. So far do the contrivances of Divine wisdom exceed the utmost ingenuity of man!

The common turnsole is so called from the flowers having a tendency, more or less, to turn towards the sun—a circumstance which in the case of the common sunflower is greatly exaggerated, in popular belief, beyond the actual facts. The common turnsole has egg-oblong, wrinkled leaves; the flowers white, in spikes, which are single on the lower, and double on the upper

parts of the plant. It furnishes the litmus, so valuable to chemists as a test of acid.

The China aster, or Chinese starwort, is a great favourite in gardens at this season, on account of the diversity in the colours and markings of the flowers. The German florists have lately improved the old China asters so much, that they are in some danger of losing the name altogether. It has become usual to call them German asters; the seed being imported from Germany in considerable quantities. In the same way ten-week stocks have been improved in size and colour by the German florists; and seed has in consequence been imported from Hamburgh to this country. The Dutch were at one time the leading florists of the world, but the English are now in many things superior to them. The Germans, as has been seen, are making great advances. As yet the French surpass us in roses; but even in this fine flower we have florists little behind the best in Paris or Rouen.

The quantity of fruit is considerably multiplied, especially that of pears, peaches, apricots, and grapes. And surely there is much that demands attention in the formation and ripening of seeds and fruits. In reference to the former interesting discoveries have recently been made. When the pollen or dust escapes

from the anther of a flower, it consists of granules, or grains, in most plants of a yellow golden colour. One of these is composed of several other smaller ones; and when it falls on the summit of the pistil, which is usually moist, the moisture causes it to burst, and the component granules to separate. Every granule so moistened, sends out a long, pointed projection, which penetrates into the pores of the summit of the pistil, and when magnified appears in form like a small pin stuck in a cushion. At length it reaches the seeds, which from that time begin to increase in size, till, if the plant be healthy, they arrive at maturity. How curious is this process! what marvellous arrangements are there for the ripening of a single seed!

It is worthy of remark, that notwithstanding the very great variety of genera and species among plants, the size and shape of the granules are no less varied, while they are adapted, in their own kinds, to the pores of the summit, and the minute passages which run from thence to the seed vessel. This appears designed by an all-wise Providence to prevent the intermixture of species by intercrossing. It is only by the persevering efforts of art that so many crosses are effected in flowers, fruits, and vegetables, which have of late years become so extensive that not merely hundreds,

but thousands of crossed plants have been produced. In roses alone, for example, there are nearly three thousand crossed sorts, and nearly as many of the heart's-ease and dahlia.

If a flower would be regarded as a great wonder, were it a novelty, should we not feel astonishment and delight could we witness for the first time the growth of corn and fruit? Think of the beautiful arrangement of a grain of wheat, so wondrously rendered fertile: a grain in which the little germ is embedded amidst its nutriment, like the egg which is laid by the parent insect, where the young as soon as hatched may obtain food. Were there not that germ, or were there not that nutriment, the grain would abide alone and perish without being productive. But when the seed-corn is sown, a change passes on it; the germ, fed by the pulpy substance around, throws upwards its stem, and downwards its root; it now draws its nourishment from the soil in which it is placed, and after producing the blade and the ear, we see the full corn in the ear ready for the reaper's sickle. "The other day," a modern writer beautifully says, "we were in a garden where Indian corn was growing, and some of the cobs were plucked to show us. First one leaf or sheath was picked off, then another, then another, then a fourth,

and so on, as if a printseller were unpacking prints out of papers; and at last we came inside, to the grains of the corn, packed up into cucumber shapes of pale gold, and each of them pressed and flattened against each other, as if some hand had been doing it in the caverns of the earth. *But what hand?* Nor is it less amazing that the rough-looking bush or tree should shoot forth its branches, and that we should see amongst them bright bunches of currants, the golden apple, or the peach with its cheek-like surface.

Another curious fact may here be mentioned. Light undergoes certain reflections or refractions. Thus it may be reflected as by a looking-glass; it may also be refracted or turned aside from its direct course, as it is when passing through water. When, then, light has gone through certain reflections or refractions, having been subjected to the action of certain bodies, it is so modified that it is said to be polarized. This term is applied because the rays are supposed to have acquired poles like the magnet, or sides with opposite properties. Now, it has been found that certain substances, such as starch, polarizes the rays of light towards the right hand, while sugar polarizes the rays of light towards the left hand. And hence, by merely polarizing the rays of light from various plants, their

constituents have been detected. It has been found by this means, that when corn is ripening, the sugar contained in the stem and leaves disappear gradually from the root upwards, and in proportion as it disappears, is partially converted into starch; and this is particularly the case in the ear of corn. It is the practice of farmers to cut their corn before it is quite ripe; and for this a sound reason may be assigned. The sugar previously contained in the ear, is changed into starch after it is cut, nearly as well as if it had not been cut, while it is not so apt to be scattered about by the shaking of the ears in harvesting.

As the day is now beginning to be hot, let us look out for a pleasant shade. We shall find it among the leafy trees. The meadow, the garden, the orchard, are, indeed, delightful.

“ Nor less attractive is the woodland scene,
 Diversified with trees of every growth,
 Alike, yet various. Here the gay smooth trunks
 Of ash, or lime, or beech, distinctly shine,
 Within the twilight of their distant shades; .
 There, lost beneath a rising ground, the wood
 Seems sunk, and shortened to its topmost boughs.
 No tree in all the grove but has its charms,
 Though each its hue peculiar: paler some,
 And of a wannish grey; the willow such,
 And poplar, that with silver lines its leaf,
 And ash, far stretching his umbrageous arm;
 Of deeper green the elm; and deeper still,
 Lord of the woods, the long-surviving oak.

THE WOOD.

Some glossy-leaved, and shining in the sun,
The maple, and the beech of oily nuts
Prolific, and the lime at dewy eve
Diffusing odours: nor unnoted pass
The sycamore, capricious in attire,
Now green, now tawny, and, ere autumn yet
Has changed the woods, in scarlet honours bright."

One of the finest objects on which we can now gaze is a magnificent tree. Look at it, with its boughs stretching from the trunk, and its branches spreading around, studded richly with sprays, covered with a profusion of leaves, and bearing the pleasant blossoms of summer. Compare the forest oak or the chesnut of the park, with the decapitated pollard of the osier holt, or the boughless and branchless elm of the hedgerow, which has been "lopped, but not topped," and the contrast will appear striking and remarkable. The pollard willow, or any other pollard, bears no slight resemblance to a huge cabbage that has outgrown its fellows, stiff, formal, and unsightly. The lopped elm, so common and conspicuous in the hedgerows round London, looks still more mutilated, "shorn," as it is, "of its fair proportions." The green tufts of leaves clustered around the stem present a stunted appearance; while the height to which those trees frequently rise is out of all proportion to their girth, and most unlike elms when left to the natural expansion

SIGHTS IN SUMMER.

of their branches, untouched by any artificial lopping.



THE OAK.

NATURAL BEAUTY OF TREES.

The natural beauty of trees chiefly depends on the growth and disposition of the branches, which are no less diversified in the various species than the beauty of flowers. The oak, for example, which has stood for centuries, unscathed by the winds, has its branches symmetrically set, and their contour regular and beautiful. The chesnut has a similar character; while the sycamore, from its greater breadth of leaf, is more gorgeous and rich in foliage, and affords a denser shelter from the summer sun or pelting rain; and the horse chesnut, especially when in full blossom, exceeds even the sycamore in beauty.

The beech, the hornbeam, and the lime, present a very different character; all the three being somewhat similar, though specifically distinct. The branches in these, while they spread forth from the trunk, have a tendency to bend down in graceful curves, the tops rising slightly, as if making an effort to regain a perpendicular position. These trees can only be seen to advantage in the park or pleasure ground, where they have space to expand their finely curved branches at some distance from other trees. In the crowded plantation, or tangled wood, instead of expanding, they shoot up a weak and thinly-branched stem, of little beauty and less value. Of these three species of trees,

the beech is the slowest, and the lime the quickest in growth, the branches increasing in the latter to several feet during one season.

How very different from any of the preceding are the pendent branches and elegantly drooping spray of the birch, particularly of the variety called the weeping birch, which is abundant in a wild state, throughout the mountain ravines of Wales and Cumberland! These trees give to the romantic rocks a graceful beauty which nothing else could impart, and contrast finely with the very different forms of the wild cherry and mountain ash, often seen in the same locality. The wild cherry has its branches as thinly set, perhaps more so, than the weeping birch; but though these are slender and peculiar, they show no tendency to droop, however far they may stretch from the main trunk. The mountain ash, again, is more apt to extend its trunk than its branches; but the old tree may frequently be seen bending from a rocky cliff in the passes of the Scottish mountains and of the Swiss Alps. When white with fragrant blossoms or laden with scarlet berries, it is no less beautiful, though in a different way, than the tall weeping birch and its waving branches.

So far, however, as branches are concerned, the most striking of the mountain trees are the firs, pines,

and cedars. In the thick forest, or the dense wood, the lower branches of trees, when deprived of a due proportion of light and air, decay, and sometimes fall off, while the upper branches continue to grow. But what thus takes place as an accidental circumstance, is the natural process in mountain evergreens. When a fir or a cedar puts forth its branches, these grow in circles round the stem; that is, the stem rises from a bud in the centre, and the branches from buds dispersed around it. But when several circles of branches, one above another, at nearly equal distances, have thus been produced, the first circle of branches decays, and at length falls off, leaving on the end no trace of their insertions. Meanwhile, the trunk advances in height, adding every successive season to the circles of branches which form the head of the tree.

In favourable situations for this mode of growth, when no accident occurs to break the top, the height to which these trees attain is very great. Every one knows that the cedars of Lebanon have been celebrated for their loftiness since the era of king Solomon; and were others permitted to grow untouched, there is no reason to doubt that they would attain, in the course of years, to equal magnitude. In the Black Forest, a group of Scotch firs has been observed, with trunks

that could not be less than a hundred and twenty feet, perfectly straight, and without a branch from the ground up to the last green circle of living branches which formed the head.

In the larch, the silver fir, and the spruce fir, the circles of branches do not so speedily decay as in some of the other species. Their heads are, therefore, not so picturesque as those of the cedar and the Scotch fir; at least, not till they attain considerable age. In their earlier stages of growth, they depend more on their lower branches for their beauty than on their heads. In some of the Alpine trees, the curving of the lower or decayed circles of branches is singularly beautiful, and gives a very striking character to the scenery.

All branches, as well as leaves and flowers, originate in buds; but a branch being a portion of the body or stem of a tree, differs from the bud it arises from, and exactly resembles the stem or trunk in structure, though the texture is less compact from its being necessarily younger, by at least one season in trees, and more or less in other plants. In looking at a tree we might be apt to conclude, that the stem or trunk would measure as much, or perhaps more, than the head of branches which spring from it, and to which it has to give support and supply nourishment. This, however, is

by no means the case. M. Du Hamel determined, by careful measurement, that the solid dimensions of the whole mass of branches, forming the head of the tree, are frequently at least one-fourth or one-fifth more; and for this reason, the trunk increases more slowly than the branches, though it grows gradually more compact and dense in texture.

A tree will not unfrequently die before it can push out a sufficient number of branches; but this will depend, in some measure, on the species. In the case of stone-fruit trees, as the cherry and the plum, they may thus be destroyed altogether; while in trees so full of life as the elder, and even the ash, the elm, and the oak, it sometimes adds to their vigour to “send them down,” as the process is described by practical men. Accordingly, when the tree is vigorous, it survives the loss of the branches, and pushes out fresh ones in a crowded form, as may be seen in the pollard oaks and mutilated elms near London, which are produced in this way.

The osier is a remarkable instance of the life of a tree continuing, in spite of the severest system of pruning off the whole branches annually. The stump only is left in the ground, about a foot above the surface, in which state it remains during winter; but,

SIGHTS IN SUMMER.

on the approach of spring, a great number of branches, consisting of the long slender twigs so valuable in the manufacture of baskets, rise up to a height proportioned to the vigour of the stump, and the geniality of the soil in which it is planted. These branches are allowed to grow during summer, till the leaves fall in autumn, when they are cut down for the use of the basket-maker. If, however, these osier branches, instead of being removed after the leaves fall, were pruned close to the stump in spring, or early in the summer, the vigour of the root would, most probably, be much injured, if not destroyed, as the numerous leaves of the young branches of course contribute to the vigour of the root during this bright season.

But now we are in the midst of the wood, observe that pretty bird, so nimbly running round and up the trunk of the fine tree before us. Few birds display more activity and address than bark climbers, and in this respect, the nuthatch exceeds the woodpecker. It is not only able to ascend, but to descend also. It is not uncommon in old woods, throughout a great part of our island; but it is not found either in Cornwall, or in the more northern districts of Scotland. The nuthatch feeds on such insects and their caterpillars as frequent and injure the bark of trees. On this account

THE NUTHATCH.

it deserves protection. But seeds and the kernels of the filbert and the hazel nut also form part of its diet. Hence, it can maintain itself during the winter, partly by searching out the caterpillars concealed in the crevices of the bark, and partly by the wild fruits just mentioned. The mode in which the nuthatch reaches the kernel of the hazel nut or filbert, is worthy of notice. It first separates the nut from the husk by its bill; it then fixes it firmly in the crevice or chink of a tree, and hammers it with its bill, until, by repeated strokes, the shell is broken. A convenient place for this process is generally resorted to time after time; a hoard of refuse nut-shells being collected in the cavity or spot where it is carried on.

The nuthatch breeds in the holes of trees, and often takes possession of the deserted dwelling of a woodpecker. When the entrance is larger than needful, it narrows it with mud or clay, and gravel, mixed together, and plastered on the margin of the opening very neatly. In this way a barricade is formed, leaving an aperture just sufficient for ingress and egress. One of its names among the French is, from this circumstance, the mason woodpecker. The nest is composed of dried leaves, artlessly put together; the eggs are five in number, of a greyish white, spotted with

reddish brown. The female sits very close, and is resolute in defending her nest, hissing like a snake, and striking violently with her bill.

There is another little bird, creeping mouse-like around the bark of that tree which it so closely resembles in the brown colour of its plumage, that did not its movements betray it, it might readily pass unnoticed. Its actions have given it the name of the creeper, and it may be approached very nearly. Watch it; see how it ascends, winding spirally round the trunk. It cannot descend like the nuthatch, and, therefore, generally begins its travels up the tree from the lower part of the trunk, using its stiff and pointed tail as a support in its progress. It is ever in motion. There! it has flitted to another tree, and is creeping up it. The creeper makes its nest of grass lined with feathers, in some hole of a decayed tree. The eggs, of a white colour, sprinkled with reddish brown, vary from seven to nine in number.

Musing on these diversified and interesting objects, time rapidly rolls on, and the heat of the sun warms even the recesses of the wood. The voices of the birds cease, and the insects retreat to the covert of the leaves. How glorious is the sun in its strength! How powerful are his light-giving, life-reviving beams! How

THE GOLD-FINCH.

forcibly does he proclaim the might, majesty, and glory of Him, who maketh the heavens his throne, and the earth his footstool; of Him who dwelleth in light, which no man hath seen, or can see, but who has clothed himself with the garment of mercy, that he may relieve our wants, and prepare us not only to contemplate God in his works, but, in a world inconceivably more glorious, to see him as he is.



SUMMER EVENING.

In the middle of this month the young gold-finch broods appear, lapwings congregate, and a little afterwards linnets gather together; and, towards the end,

SIGHTS IN SUMMER.

the beech-tree puts on its autumnal hues, beautiful indeed, even in decay. How delightful are walks now towards the close of the day! Of the good man it is said,

“ His mind is ever bright as noon,
And calm as summer evenings be.”

Now we may enjoy that serenity; and if, amidst our survey of the works of God, we can contemplate him as “our Father,” through our union by faith to Christ as the elder Brother of the heavenly family, ours will, indeed, be the peace which passeth all understanding.

There is a flower at which we should look: it is the evening primrose. One of our poets has said:—

“ Fair flower, thou shunn’st the glare of day,
Yet lov’st to open, meekly bold,
To evening’s hues of sober grey,
Thy cup of paly gold:

“ Be thine the offering, owing long
To thee and to this pensive hour,
Of one brief, tributary song,
Though transient as thy flower.

“ I love to watch at silent eve
Thy scatter’d blossoms’ lonely light,
And have my inmost heart receive
The influence of that sight.

“ I love at such an hour to mark
Their beauty greet the night-breeze chill,
And shine, ’mid shades of gathering dark,
The garden’s glory still.

THE HARVEST MOUSE.

- “ For such, ’tis sweet to think the while,
When cares and griefs the breast invade,
Is friendship’s animating smile,
In sorrow’s darkening shade.
- “ Thus it bursts forth, like thy pale cup,
Glistening amid its dewy tears,
And bears the sinking spirit up,
Amid its chilling fears.
- “ But still more animating far,
If meek Religion’s eye may trace,
E’en in thy glimmering earth-born star,
The holier hope of grace.
- “ The hope that as thy beauteous gloom
Expands to glad the close of day,
So through the shadows of the tomb
May break forth Mercy’s ray.”

The smallest of British quadrupeds, if, indeed, not of all, and one of the most beautiful, is the harvest-mouse. This elegant little creature is scarcely half the size of the common species. Its colour is of a delicate reddish fawn; its eyes are dark, and its actions, free, sportive, and lively. It lives entirely in the fields, resorting during winter to burrows of its own construction, or to corn-ricks, for the sake of food as well as warmth and comfort. It forms an exquisite nest of dried grasses, like a bird’s, and suspends it among the stalks of the standing corn. The nest is most artificially plaited, perfectly round, and about the size of a cricket ball, with the aperture so ingeniously closed that it is at least difficult to tell to what part it belongs. One

found by White, of Selborne, who first introduced the harvest-mouse to public attention, was so compact and



HARVEST MICE.

well filled, that it would roll across a table without being discomposed, though it contained eight little mice. It was found in a wheat field, suspended on the head of a thistle.

Our Saxon ancestors emphatically called August “barn month,” because it is the season for reaping and gathering into store-houses. The crops usually begin

HARVEST.

with rye and oats, proceed with wheat, and finish with peas and beans. And as the pious observer contemplates the sea of yellow corn, spreading wide around him, and holding out a goodly prospect of seed to the sower and bread to the eater, he will remember the promise given, when the offering of Noah was accepted : “ While the earth remaineth, seed-time and harvest, and cold and heat, and summer and winter, and day and night shall not cease,” Gen. viii. 22.

- “ With bread, the heart of man to cheer,
See, bending low, the ripened ear
Bow its luxuriant head !
In vain, ye swains, had been your care,
Had not He caused the blight to spare
The promise of the summer fair,
And bid the sun, the rain, the air,
Their kindly influence shed.
- “ He bade the soft, refreshing gale
Blow gently down the teeming vale,
Nor hurt the peeping grain ;
But when the ear began to rise,
To Him we raised our anxious eyes :
Oft, from the cisterns of the skies,
He sent, in mercy, rich supplies—
Early and latter rain.
- “ And now his hand has crowned our toil,
We joy like those who share the spoil,
The harvest home to bear !
With shouts the laughing pastures ring ;
With grateful hearts, ye reapers, sing
The praise of Heaven’s eternal King,
Through whose paternal care ye bring
The produce of the year !”

And well will it be to pause, and consider that there is a harvest in which it becomes all to engage. The words of the Most High demand universal attention: "I the Lord search the heart, I try the reins, even to give every man according to his ways, and according to the fruit of his doings," Jer. xvii. 10.

Reader, a work more important than that of the husbandman in harvest is yours. Far more incumbent is it, indeed, that you should improve every moment, and avail yourself of every aid, than it is that he should rise early and be active all the day; for the salvation of the soul is far more precious than all the produce of the field, and even than the world itself. It is to be ascribed to the free grace of God; yet many things are required of you. The blessings of the gospel are bestowed "without money and without price;" but they are to be desired, and sought, and gained. "Awake, thou that sleepest, and arise from the dead, and Christ shall give thee light."

Think of the blessings you need! The duties devolving on you must be discharged, or you will at last receive the doom of a "wicked servant;" seek grace, therefore, to fulfil every trust. A long catalogue of sins is arrayed against you; go, ask for pardon of Him

against whom you have grievously revolted, through the precious blood of Christ. You have passions to be subdued; be it yours to supplicate and enjoy the influences of the Holy Spirit, by whom alone you can be made holy and happy.

Think of the brevity of the season for obtaining these blessings! The term of life, like the duration of harvest, is short. You know not what a day or an hour will bring forth. "Man knoweth not his time: as the fishes that are taken in an evil net, and as the birds that are caught in the snare; so are the sons of men snared in an evil time, when it falleth suddenly upon them," Eccles. ix. 12. Even youth is no defence from the grave. "For what is your life? It is even a vapour, that appeareth for a little time, and then vanisheth away," James iv. 14. "Seek ye," therefore, "the Lord while he may be found; call ye upon him while he is near. Let the wicked forsake his way, and the unrighteous man his thoughts: and let him return unto the Lord, and he will have mercy upon him; and to our God, for he will abundantly pardon," Isa. lv. 6, 7. "Whatsoever thy hand findeth to do, do it with thy might; for there is no work, nor device, nor knowledge, nor wisdom, in the grave, whither thou goest," Eccl. ix. 10.

Think, too, of the fearful consequences of neglect. "He that sleepeth in harvest is a son that causeth shame," Prov. x. 5. The wicked shall arise from their graves to "shame and everlasting contempt." Destruction and misery are in their ways. They will have to say, "The harvest is past, the summer is ended, and we are not saved," Jer. viii. 20. Escape, then, for your life. He who has redeemed millions is able and willing to save you.

Sights in Autumn.



THE RELIGIOUS TRACT SOCIETY,
56, PATERNOSTER ROW, AND 65, ST. PAUL'S CHURCHYARD;
AND SOLD BY THE BOOKSELLERS.

SEPTEMBER.



“Season of mists and mellow fruitfulness,
Close bosom friend of the maturing sun;
Conspiring with him how to load and bless
With fruit the vines that round the thatch-eaves run;
To bend with apples the mossed cottage trees,
And fill all fruit with ripeness to the core;
To swell the gourd, and plump the hazel-shells
With a sweet kernel; to set budding more,
And still more, later flowers for the bees,
Until they think warm days will never cease,
For Summer has o’erbrimmed their clammy cells.”

KEATES.

THE greater part of the flowers of summer, which we contemplated in their beauty, have now disappeared, giving place to others of various characters and qualities. They leave behind them, however, in their seeds, and the means provided for their diffusion, an inexhaustible subject for our meditation. Let us then mark every successive appearance in the natural world, and gather with delight the instruction provided in such abundance.

SIGHTS IN AUTUMN.

Amongst the floral beauties of this month, we should notice the harvest or hare bell. It begins to blow a month or two earlier, but continues to put forth its delicate blue blossoms even later than the present month. As it will grow with the smallest portion of soil, it is well adapted to ornament the tops of walls and rock work; where, however, it will not flourish, except by saving the seeds.

Another beautiful flower commonly grown in such places, or in pots for the window, is the trailing snap-dragon, whose pretty leaves and delicate blossoms, yielded profusely, render it a universal favourite. This also is difficult to preserve by transplanting, though it grows so readily from seed that it soon becomes too common, and spreads, as a weed, all over the garden.

And shall we not say—

“ The rustic blushing heath,
That lurks the fern beneath,
Should grace our wilding wreath
With many a pendent bell?”

Most certainly the bell heath is one of our prettiest wild flowers, and, though rather small when compared with the showy Cape heaths, it is well worthy of being cultivated in the flower-garden, or even in the greenhouse.

THE DAHLIA.

The dahlia is now the chief ornament of the gardens, and a splendid show it makes with its endless variety of forms and colours. The original dahlias are natives of Mexico, where two species are found wild. By improvements in culture, and intercrossing these artificially, we have these flowers from the darkest purplish brown to the purest white. Only a few years ago no double dahlias were known; but now they have so increased in favour, that a single one is becoming rare.

The artificial crossing, at first extensively practised, is still adopted where very fine sorts are in request; but it is not indispensable in procuring varieties. When flowers have once been crossed, the seed they yield has a strong tendency to originate varieties, as if efforts were made by each plant to return to its original form and colour. One gentleman, it is said, from saving the seeds of the shaded rose-coloured dahlia, named Douglas's Augusta, procured varieties of more than a dozen colours. Similar results have, in hundreds of instances, been produced by the experiments of other florists.

One gentleman has been successful in cross-breeding these flowers, by tying together some of different sorts, such as the rose-coloured and the white, the rose and

the blue. He described his seedlings for one season, one thousand in number, as having all degrees of colours, from dark blue to the most beautiful azure; from bright rose-colour to the most delicate blush; from pure white to french or greyish white, in countless varieties of shades and in all sizes. Some were the size of a sixpence, some an inch or an inch and a half in diameter.

Among our wild autumn flowers, that of the great bindweed is one of the most elegant. See how its large white blossoms adorn the hedge-rows, so richly garlanded with its luxuriant festoons! This graceful weed is not universally spread throughout our island. In the midland and more northern countries it is rarely or never seen.

Seeds claim a portion of our attention. Look, for instance, at the thistle-down. It is attached to the summit of the seed, which in some species, such as the milk-thistle, is rather heavy, as a car is attached to a balloon; or any object is attached to a parachute. The down is, however, sufficient to float the weightiest seeds to some distance from the parent plant, having, for the most part, the advantage of a height of two or three feet from which to start. The direction and the distance of the flight of the down-suspended seed

THE THISTLE-DOWN.

must, of course, depend on the state of the wind ; but, sooner or later, the gravity of the seed attached to its balloon or parachute brings it to the ground, and always, be it observed, in a position perpendicular to the surface of the soil where it may chance to fall. This enables the seed to insinuate its thinnest end into any chink or crevice in the soil, and the washing of rains, or the accidental tread of animals, fixes it there, where it meets with moisture and germinates.

The mode in which the seeds of the thistle are diffused affords a very beautiful illustration of the wisdom of the Creator, in adapting means to an end. The diffusion of seeds is, however, very various in different sorts of plants. A very remarkable one occurs in such plants as the balsam, and the garden heartsease, which throw their seeds to a distance by means of a spring.

The seeds of the annual or sub-annual violets are contained in an oblong angular pod, of a single chamber, consisting of three valves ; that is, the shell of each pod is composed of three pieces. Along the inner part of each valve the seeds are attached, and remain so for some time after the valves, in the process of ripening, have separated and stand open. In consequence of the heat of the sun, the sides of each

valve shrink and collapse; and in this state the hard and very smooth edges of the valve press firmly on the seeds, which, from being before apparently irregular in arrangement, come into a straight line. Like the edges of the valve, the seeds are not only extremely smooth, polished, and shining, but regularly egg-shaped; so that,



SEED-VESSELS OF THE VIOLET.

a. Capsule, ripe, and on the eve of splitting open.

b. A capsule, burst, contracting on the seeds, to force them from their sockets.

c. A section of a capsule.

when pressed upon by the hard collapsing edge of the valve, it slides gradually down the sloping part of the seed, and throws it with a jerk to a considerable distance.

Nor is this all. Another part of the mechanism is worthy of equal attention. Before the seed is ripe, the capsule or pod hangs in a drooping position, with the calyx or cup spread over it like an umbrella. Thus it is guarded from the moisture of rains and dews, which would retard the process of ripening; but no sooner is this completed than the capsule, supported by the cup, becomes upright. Gaining by

THE VIOLET.

this means a higher elevation, the mechanism already described is more effective, and the seeds are thrown to the distance of several feet from the plant.

On comparing the annual and sub-annual species of violets with the perennial creeping species, nothing is more remarkable than the difference of the two in shedding their ripe seeds. The creeping



RIPE SEED-VESSELS OF THE VIOLET.

a is the seed-vessel, hanging downwards by its bent stalk, and covered by a large five-leaved calyx.

b The same, turned upwards by the straightening of the stalk, and split into three expanding valves.

In *c* it appears ejecting its seeds.

violet, being provided, in their offset runners, with the means of escape from the soil, have no further mechanism for scattering their seeds. They have, indeed, the same chamber with its three valves; but they do not collapse on the ripe seed in order to throw it to a distance. And if they did, the distance would be necessarily small, from their not having any means of elevating the capsule, which usually hangs near the ground.

Moreover, the first flowers of the creeping violets, so much admired for their fragrance, rarely produce any seed. It is only the flowers produced in summer, nearly without petals, and rarely seen or observed, that yield seeds. The reason is, perhaps, because in very hot dry weather, as the whole plants, runners and all, are very liable to perish, the seeds are only then produced, that the species may not be altogether lost.

Every careful observer must be struck with the immense profusion of seeds beyond what appears necessary for the continuance of the species of individual plants. But their perpetuity is not the sole design of an all-wise Providence. God openeth his hand, and satisfieth the desire of every living thing. Many of the smaller animals feed on seeds, no less than we do on certain fruits; and sometimes great benefit arises to the husbandman from the unseen operations of tiny creatures, whose existence he may not even suspect.

A naturalist, desirous to procure the seeds of various thistles, to sow in a garden for the sake of experiment, collected, during an extensive tour on the continent, a very great number of heads of seemingly ripe seed, which he met with by the roadsides. In his haste he



SEPTEMBER.

did not examine them very minutely till after his return to England; but great was his disappointment on finding that the heads which seemed the largest and best ripened, seldom contained a seed fit to be sown. The grubs of a small species of fly had been so numerous hatched in them that they had devoured, as their appropriate food, almost every seed, and left nothing but the husks.

From this circumstance, it may be observed, that thistles, having by means of their down an extraordinary facility for being diffused, if they were all permitted to ripen, they might soon multiply to such an extent as to occupy much of the space required for more valuable plants. The fields cultivated with corn, and the gardens with vegetables and fruits, would thus be overrun by these thistles. But when carefully sought after by the fly, whose grubs feed on the seeds, this evil is prevented; while provision is made for multitudes of living creatures. In the case of chick-weed, groundsel, shepherd's purse, and such like things, the immense production of seeds is in part kept under by their being the natural food of birds. At this season, the seed-eating birds congregate in flocks, and devour very great quantities of seeds, wherever they can find them, in pastures, stubble-fields, and

SIGHTS IN AUTUMN.

sometimes even in gardens. So true are the words of a rural poet :—

“ All nature owns with one accord
The great and universal Lord ;
Insect and bird, and tree and flower,
Bear witness to his wondrous power ;
And ‘ God is with us,’ all reply,
Creatures that creep, walk, swim, or fly,
‘ God reigns on earth, in air, in sky.’ ”

Hop growing is a remarkable feature in the landscape, presented by some parts of the county of Surrey, and many of Kent. The hop is a slender, climbing plant, which requires a very rich mellow soil and careful culture. At an early period in the year long poles are stuck in the ground near the plants ; to these the hop-bines are led and tied as they shoot, till they have taken hold of them, and thus aided, they grow to a considerable elevation. In September, the flower containing the seed is of a fine straw colour, turning to a brown ; it is then in perfection ; should it acquire a darker tint, it is over-ripe. As soon as the desired hue appears, the hop-pickers flock from surrounding places, and even from a distance, to the grounds, where they may be seen actively engaged in this peculiar labour of the season.

September is one of our most delightful months, having, like others, its peculiar characteristics. Many

FRUIT.

flowers are still in their beauty, and some plants blossom only at this season ; but it is peculiarly the fruit-season.



Look around ! The apple-trees bend beneath their load, and pears are in equal profusion. The downy peach, the shining plum, and the ruddy fragrant nectarine, adorn the sunny wall. There too, perhaps, in its full ripeness, hangs dark,

“ Beneath his ampler leaf, the luscious fig :
The vine, too, here her curling tendril shoots,
Hangs out her clusters glowing to the south,
And scarcely wishes for a warmer sky.”

SIGHTS IN AUTUMN.

As harvest is over, the fields, lately waving as a sea of corn, are now covered only with stubble, and the precious grain is laid up in the barn. Already, too, the ploughman is at work, preparing the earth for fresh seed, to spring up in due season according to the appointment of the God of nature and providence. And it will be well to go forth, and in our winding walk “meditate the book of nature, ever open.” See how the stubble fields are covered with filmy flakes, still wet with the dew of morning.

They are the delicate work of a small spider. At this season showers of gossamer, as it is called, fall during the night. Fields and hedges, extending for some miles, have been seen thus lightly carpeted; and extraordinary showers have been recorded.

One of these occurred in September, 1775. Before day-break had commenced, the fields were matted over; but at nine o'clock, the day

being warm, bright, and cloudless, a shower began to



THE GOSSAMER SPIDER.

fall, and continued to do so without interruption to the close of the day. The webs were not single, filmy threads, floating in the air in all directions, but perfect flakes. Some were nearly an inch broad, and five or six long. That they were considerably heavier than the atmosphere was evident from the velocity with which they fell. This shower was not limited to the lower grounds, but extended to higher situations. On a common, three hundred feet higher than the fields around, the webs filled the air above, and descending in constant succession, twinkled in the sun as they fell; and they hung so thickly on the trees and hedges, that baskets might have been filled with them.

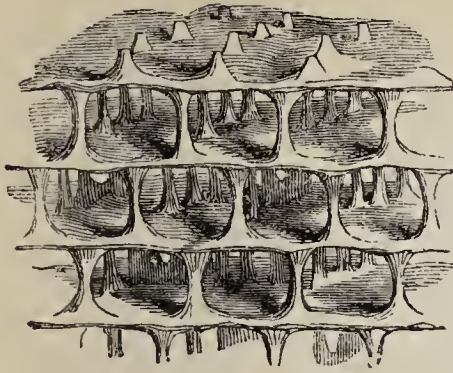
But how, it may be asked, are such results produced? Suppose, then, each one of a multitude of spiders to rise on a filmy streamer, as they have often been seen to do, and, having attained a certain height, to shoot out threads in still greater abundance. It would soon happen in this case that the streamers of one would become entangled with those of the other, so as to form flakes. A slight change in the atmosphere might soon cause them to be saturated with moisture, though no clouds were visible. Thus they would fall of course; the spiders either quitting their parachutes, or descending with them. But even without moisture,

flakes often seen would not be buoyant enough to remain floating on a calm day, when no wind occurred to drive them, as feathers, through the air.

There is another sight. Observe that swarm of black ants, all winged. Thousands are flying around, and thousands more cover the trees and bushes; it is their swarming season. Ants, like bees, live in societies, consisting of males, females, and neuters. The latter, which are imperfect females, never acquire wings, and are the labourers of the population. The males and females are wingless for a certain period; it is when these are developed that they quit their habitation; the females now seek out fresh settlements, and having detached their wings by means of their feet, they lay their eggs, and thus found a new colony. Some, it is said, however, are retained in the parent colony by the neuters, who cut off their wings to constrain them to deposit their eggs in their old habitation. After this they are either suffered to depart, or driven from the society.

The nature and form of their habitations differ according to the instincts of the different species. They are generally made in the ground. Some construct their abode of grains of earth or sand, and form galleries leading to an under-ground encampment. Others make a raised city above the surface, using

fragments of vegetables and other matters, which they collect for that purpose.



GALLERIES OF JET ANT

Some live in old decayed trees, piercing them with galleries in all directions, leading, however, to a central apartment, where their eggs are deposited and the young reared.

Towards the latter end of autumn the male and female ants of our portion of Europe perish ; but the neuters remain during the winter, in a torpid state, in their habitations, which they had before rendered secure.

Pursue we our ramble. The bee is still abroad, hovering round the flowers which now blossom ; and the saffron butterfly flits lightly by. Already, too, has a curious insect been busily at work. Taking up its abode in hazel-bushes, it perforates with its rostrum, or beak, the nut whilst young, depositing one egg in each. The wound in due time heals, and the caterpillar, which proceeds from the egg is completely inclosed by the shell ; it feeds on the kernel till full grown, when it eats its way out, retires under ground, and changes to a chrysalis, appearing next year as a perfect insect.

SIGHTS IN AUTUMN.

A poet says :—

“Where are the songs of Spring? Ay, where are they?
Think not of them, thou hast thy music too—
While barred clouds bloom the soft-dying day,
And touch the stubble plains with rosy hue;
Then, in a wailful choir, the small gnats mourn
Among the river salallows, borne aloft,
Or sinking as the light wind lives or dies;
And full-grown lambs loud bleat from hilly bourn;
Hedge crickets sing; and now with treble soft
The red-breast whistles from a garden croft;
And gathering swallows twitter in the skies.”

To notice the habits and manners of the feathered race, and especially of our summer birds of passage, is truly interesting. The swallows have now collected into vast flocks, and are rapidly traversing the regions of the air, as if trying their powers of wing, prior to their final departure. They are, doubtless, also, eagerly chasing their insect prey. Now that the toil of incubation and of rearing their brood is over, the old birds recruit their energies for their coming flight from our shores. The young birds prepare also for the approaching crisis. And as the evening draws on, the thousands of swallows now on the wing cluster around barns, tall trees, and lofty edifices, on which they settle during the night, huddled together in close array.

Their favourite resting-place, however, during this month, is found in extensive reed-beds; perhaps, from the shelter afforded from the chilly breezes of our autumnal nights. As the sun begins to decline, large

flocks may be seen whirling and sweeping over the reeds; now settling, now rising again altogether, and again settling. All this time they keep up an incessant and noisy twittering, till, at length, they finally rest, and the clamour gradually subsides.

It is from their partiality to reed-beds that the old notion of the swallow's submersion beneath the waters, in a torpid state, appears to have arisen. Many of the earlier naturalists were disposed to think that they thus passed the winter, buried in the oozy mud of fens and marshes; and that they did not actually migrate. They forgot that birds of far less power of flight—as woodcocks and quails—were positively known to take long aerial journeys. It is now well ascertained that swallows migrate to Africa. If kept in confinement in our climate during the winter, they moult in February. This fact alone is utterly at variance with the idea of their going into a torpid state, and shows that they acquire renovated plumage in the land to which they repair. Thus they are prepared to take their flight back to Europe in January or February, and, travelling by easy stages, they would reach our island and the northern portions of the continent, by the early part of April.

In vain shall we now look for the swift; it has

SIGHTS IN AUTUMN.

already taken its migratory course southwards. But starlings congregate in numerous flocks. These birds may be observed accompanying rooks in their search for food over fallow or new-ploughed lands. Why, then, is this? It appears that the starling is naturally partial not only to the society of its own species, but



PARTRIDGES.

to that of other birds. Flocks of them are often seen mingled with lapwings, which, at this season, leave the moors and boggy grounds, for fallow lands and

cultivated fields, where food is easily obtained. Like the swallow, the starling is partial to reed-beds, as roosting-places for the night. It is interesting to watch a phalanx of these birds, wheeling, sinking and rising, over the reeds, and performing a multitude of evolutions in the air. All act in unison, as if guided by some signal from a leader, till at length they settle to rest.

Wheatears now begin to congregate, and pass towards the south-eastern coast, covering the downs of Kent and Sussex, previously to their departure. The stone curlews, scattering themselves in pairs during the summer over high pasture-grounds and extensive upland commons, also collect into flocks, which make their way to the coast, in readiness to migrate. The ring-ouzel, by no means a common bird in our island, leaves the mountain districts of England and Scotland, and, associating in small companies, journeys to the south, preparatory to its flight to a warmer climate. These birds are sure to be observed in Sussex, and occasionally in considerable numbers, frequenting the shrubs and bushes which are scattered over the downs, and which afford them shelter.

Many persons now visit the shores of the ocean ; and what an object is here!

SIGHTS IN AUTUMN.

“ Beautiful, sublime, and glorious ;
Mild, majestic, foaming, free ;—
Over time itself victorious,
Image of eternity.

“ Epithet-exhausting Ocean !
'Twere as easy to control,
In the storm, thy billowy motion,
As thy wonders to enrol.

“ Sun, and moon, and stars shine o'er thee,
See thy surface ebb and flow ;
Yet attempt not to explore thee,
In thy soundless depths below.

“ Whether morning's splendours steep thee
With the rainbow's glowing grace,
Tempests rouse, or navies sweep thee,
'Tis but for a moment's space.

“ Earth—her valleys, and her mountains—
Mortal man's behests obey ;
Thy unfathomable fountains
Scoff his search and scorn his sway.

“ Such art thou, stupendous Ocean !
But, if overwhelmed by thee,
Can we think without emotion
What must thy Creator be ?”

All the aspects of the sea are interesting. Many will recognise at once the fidelity of the following picture :—

“ Be it the summer-noon : a sandy space
The ebbing tide has left upon its place ;
Then just the hot and stony beach above,
Like twinkling streams in bright confusion move ;

THE OCEAN.

(For heated thus, the warmer air ascends,
And with the cooler in its fall contends)—
Then the broad bosom of the ocean keeps
An equal motion; swelling as it sleeps,
Then slowly sinking; curling to the strand,
Faint, lazy waves o'ercreep the ridgy sand,
Or tap the tarry boat with gentle blow,
And back return in silence, smooth, and slow.
Ships in the calm seem anchored; for they glide
On the still sea, urged solely by the tide;
Art thou not present, this calm scene before,
Where all beside is pebbly length of shore,
And far as eye can reach, it can discern no more?"

At such a time, when the heat of mid-day is past, and the refreshing sea-breeze invigorates the exhausted frame, it is delightful to wander along the beach, and observe the various objects there, which are full of interest. The sea-shore is, indeed, the last place in which a true lover of nature can be idle. Such a number of beings, varying in form and character, in habits and manners, and in the design of their existence, here surround him, as may often employ his time and attention. Yet how many annually visit the sea, some for the sake of health, some for amusement and pleasure, who leave it without having examined a single one of the natural productions with which it teems—an investigation which would have made many an uneasy hour one of gratification and instruction.

As the retiring tide leaves bare a low cluster of weed-covered rocks, with little ponds between, we are sure of finding there something worthy our scrutiny. The flower-like actinia—a species of polyp, called also the sea anemone, and the sea sunflower—asks examination.



THE SEA ANEMONE

It consists of a soft, fleshy cylindrical body, attached by its base to the surface of the rock, the opposite extremity having a mouth, surrounded by several

rows of arms, which are capable of being expanded, contracted, or moved about as may be required. When the arms are fully expanded, the appearance of the actinia is very beautiful, and the effect is increased by the fine colours which these arms often assume. These curious animals are very sensitive; contracting not only when touched, however delicately, but even when a dark cloud passes over the sky, as if apprehensive of impending danger from a sudden diminution of light.

Should the hand of the observer endeavour to disengage an actinia from the rock to which it is attached by its sucker-like base, he will find the creature forcibly contract itself into a firm round mass, with a slimy surface, and that it is not easily removed without injury. These animals are not, however, so fixed that they cannot change their situation. They can slowly glide on the surface of the rock, or detach themselves entirely, and, filling themselves with water, suffer themselves to be carried to another spot. How admirably, then, are they adapted to their circumstances! Here, as in every other natural object, we mark the Divine hand.

Look now at other creatures! Observe those floating masses of jelly! Who, apart from information on the subject, would suppose they were living animals? Here is one; it is a jelly-fish, or medusa. The one we have selected often attains to the weight of several pounds, measuring from a foot to two feet in the diameter of its umbrella-like surface. And yet if it be removed from the sea, and exposed to the sun and air, it seems to melt away; and it will be found that its ordinary bulk and weight are owing to the presence of sea-water contained in numberless filmy cellules. This drains off gradually in a clear, unaltered state, and in a

short time this fluid will entirely escape, and leave only a filmy tissue, so inconsiderable in quantity as to weigh but a few grains. This scarcely perceptible tissue is, then, the solid matter of the animal, or rather the animal itself, which may be considered a maze of filmy cells, in which the sea-water maintains the creature's vitality, and becomes the instrument in performing its various functions.



MEDUSA

The usual form of this creature is that of a mushroom. It has a large circular disc above, which enables the animal to float steadily on the surface of the water; and is somewhat concave in the under surface, from

which various processes hang in a pendant manner, and are organs for the absorption of nutriment. Gelatinous in its texture, it is capable of certain contractile movements; these are essential to its swimming on the surface, for on suspending them, it immediately sinks. The movements are an alternate expansion and contraction of the disc, resembling a partial opening and shutting of an umbrella, and are repeated with great regularity. About fifteen flapping or contractile movements take place every minute. If the surface be calm, this extraordinary animal can propel itself along in any direction, for it can strike the water obliquely. But it is generally seen floating in shoals, passively carried onwards by the wind or current. After a storm, great numbers may often be found dead on the beach; in a short time, however, they dry away as has just been observed; or are washed back into the sea by the next tide.

Every part of this creature is worthy of notice. The stomach, for example, is a cavity of considerable size, in the centre of the under surface of the disc, at its union with the peduncle. It is either really or apparently divided into four compartments, by means of a filmy membrane; and it is usually found to contain

a yellowish and almost fluid pulpy matter, which is regarded as the digested aliment. Destined to supply the demands of the system through which it circulates, it traverses certain large tubes or vessels which radiate from the stomach towards the circumference of the disc. These are subdivided into smaller branches, and form numerous junctions with each other, so that there is on the margin a complete mesh of tubes.



OCTOBER.



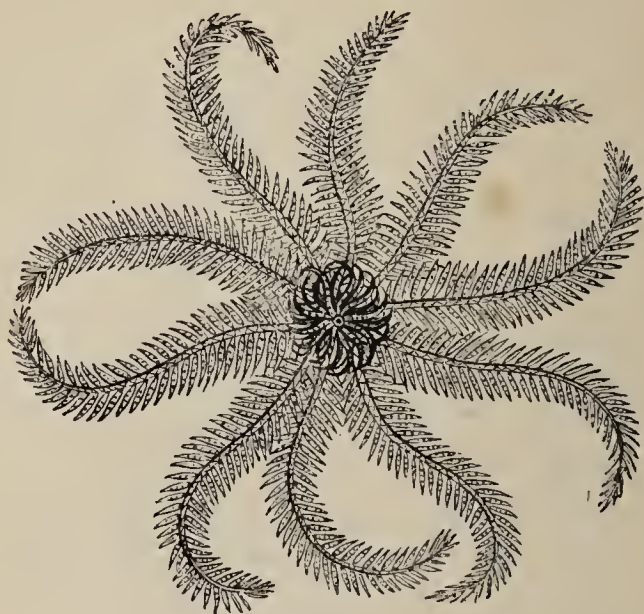
“ The year is now declining ; and the air—
—When morning blushes on the orient hills—
Embued with icy chillness. Ocean’s wave
Has lost the tepid glow, and slumbering fogs
On clouded days brood o’er its level plain ;
Yet, when the day is at meridian height,
The sun athwart the fading landscape smiles
With most parental kindness, softly sweet,
And delicately beautiful—a prince
Blessing the realms whose glory comes from him.
The foliage of the forest, brown and sere,
Drops on the margin of the stubble field,
In which the partridge lingers insecure,
And raises oft, at sombre even-tide,
With plaintive throat, her dull and tremulous cry.
The sickle of the husbandman hath ceased,
And left the lap of nature shorn and bare ;
The odorous clover-flowers have disappeared ;
The yellow pendulous grain is seen no more ;
The perfume of the bean-field has decayed ;
And roams the wandering bee o’er many a path,
For blossoms which have perished.”

ANON.

THE sea-shore presents many objects not yet noticed, one of which now deserves our attention. Observe,

SIGHTS IN AUTUMN.

for example, that singular creature slowly creeping at the bottom of a little basin in the rock filled with clear sea-water. Until the tide returns it will be imprisoned



ROSY-FEATHER STAR.

there, not because it cannot escape, but because it will not voluntarily leave its present element. It is a star-fish—a creature full of wonders ; able, for instance, to devour oysters, a favourite prey—to move about at pleasure on some remarkably-constructed feet with which it is provided, and even to climb up the sides of perpendicular rocks, though they may be smooth and slippery. Catch one of these animals, if you can, put

THE OYSTER.

it in a large glass vessel of clear water, and you will find much to observe in its curious motions.

Those small vessels in the distance present a beautiful picture, crowded as they are on the placid surface of the water, and with the blue sky stretching over them above. Men are there engaged in dredging for



BOATS COMING IN—CIRRO-SPRATUS CLOUD

oysters, which are taken at this season from their beds, and sent in great quantities to the markets. These beds are produced by oysters purposely deposited in convenient situations, where they breed and keep up a

due supply. The oyster, be it observed, is not a fish, as some suppose; it is one of the mollusks, so called from the softness of their substance. To the same section belong the mussel, the cockle, the scallop, and thousands more. These animals are housed in a firm, hard, calcareous shell, consisting of two parts, or valves, secreted by a part of the body called the mantle. In some species it undergoes, at certain seasons, a temporary development, so as to enable it to produce spines, ridges, or raised ornamental lines on the shell, a row of such being added at given intervals. The oyster has no locomotive powers; it remains cemented to the rock, or to its fellows forming the bed, by a calcareous exudation on the outer surface of the shell. There it grows and lives the allotted term of its existence. Other two-shelled creatures are not so chained down; they can propel themselves along the bottom of the sea, or burrow in the sand with considerable facility. So it is with the cockle and the razor shell.

Botanists are familiar with a tribe of marine plants called algæ, which comprehend the sea-weeds, lavers, and the species of similar habits submersed in fresh water. They vary in structure from the state of simple microscopic vesicles, to branched woody indi-

viduals many fathoms in length. Some of them are only visible to the naked eye when they are collected in heaps ; others grow together in the beds of the ocean, and when they rise to the surface form floating banks of such an extent as to impede the course of ships. Of all the species, the most common is a plant of which great quantities are cast on our coast. It is known by its strap-shaped, olive-green, forked divisions, having little yellowish oval uneven pods at their points, and by the crackling noise it makes when trodden on ; a circumstance which is caused by its stems having a considerable number of air-bladders. The structure of the pods is very curious. Externally they consist of a hard rind, covered with tumours, each of which has a little hole in its centre. Within is a soft mucus substance, in which lie, next to the rind and immediately below its tumours, a number of round balls. These little balls are composed of jointed threads, which hold together a great many little oval grains, enveloped in a sort of jelly. The grains, when ripe, are discharged through the holes in the tumours, and thus the species is continued.

A poet, already quoted, recurring to the visits he paid to the shores of the ocean, thus alludes to another sight :—

SIGHTS IN AUTUMN.

“ Pleasant it was to view the sea-gulls strive
Against the storm, or in the ocean dive,
With eager scream; or when they dropping gave
Their closing wings to sail upon the wave :
Then as the winds and waters raged around,
And breaking billows mixed their deafening sound,
They on the rolling deep securely hung,
And calmly rode the restless waves among.”

How easy and buoyant is the flight of these birds ! Every few minutes one may be observed to sweep down to the surface of the water, and then rise again into the air, having most probably picked up some dainty morsel. Several are meanwhile lightly floating on the curling waves. Though they thus swim, they do not dive, but merely collect their food from the surface, or search for it on the shore, when the tide has retired. Some of the species, as the common gull, often fly inland to a considerable distance, and feed on earth-worms, grubs, and snails.

The birds of this group are eminently gregarious, breeding together in large companies ; but each species has its peculiar situation. The Kittlewake-gull, for example, selects the narrow ledges which jut from the face of perpendicular rocks, or cliffs overhanging the sea. Others, as the lesser black-backed gull, and the herring-gull, make choice of low, flat, and exposed rocky islands, which they sometimes

TERNS.

almost cover with their nests. The black-headed gull retires from the sea far inland to breed, making its nest among the herbage of fresh-water pools and marshes.



GULLS ON THE SHINGLES

Yonder skims a flock of terns, or sea-swallows. Of this genus several species visit our coasts to breed, and of these one of the most frequent along our eastern and southern coasts is the arctic tern, which

SIGHTS IN AUTUMN.

tenants in great numbers the Fern islands, to which others of the species also resort. The flight of the tern, and its general appearance on the wing, reminds the observer of the swallow or swift; it is strong, rapid, and enduring. These birds may be seen, in rough weather, sweeping over the rolling waves, and occasionally plunging in with such force as to disappear for several seconds. It is thus that they take their prey, consisting of small fishes, on which they dart, when within a certain distance of the surface. The terns, like the gulls, congregate in large flocks during the breeding season, and make their nests so close together, that it is sometimes impossible to cross the ground they occupy without breaking the eggs, or treading on the young. Low solitary islands along the coast are their favourite localities.

It may be, too, that a swell of the ocean will call to mind the words of Polwhele—

“ Nearer now the labouring deep
Arose, on one enormous wave!
Then would another billow heave,
Vast and unbroken!—without foam.
It seemed one mass of steely gloom;
Till, swelling to a haughtier height,
With shuddering sweep,
It burst against a bellowing rock:
And a long ridge of white
Rushed o’er the sea, like furnace smoke;

A PLEASANT WALK.

Or like the high-maned troop of horse
That, in their headlong course,
All iron black, toss fiery froth
Amidst the sabres' wrath!"

But words fail to pourtray the objects on which the eye may be fixed. Grand, beyond all description, is the roar of the rolling billows. How sublime, from its immensity, the spectacle presented by the mighty sea, stretched out till its dim outline blends with the horizon—an image of eternity! What, then, must He be who is mightier than many waters; who appointed to the ocean its limits, and said, "Hitherto shalt thou come, but no further; and here shall thy proud waves be stayed!" Let it be, then, our great desire to know Him, not only as revealed in his works, but manifested in the gospel of Christ, where he appears "reconciling the world unto himself," and changing man, so fearfully depraved, into "his own image, from glory to glory."

Once more let us turn to the poet Crabbe, to whom we have listened again and again:—

"I loved to walk where none had walked before,
About the rocks that ran along the shore;
Or far beyond the sight of men to stray,
And take my pleasure when I lost my way.
For then 'twas mine to trace the hilly heath,
And all the mossy moor that lies beneath.
Here had I favourite stations where I stood,
And heard the murmurs of the ocean-flood,

SIGHTS IN AUTUMN.

With not a sound beside, except when flew
Aloft the lapwing, or the grey curlew,
Who with wild notes my fancied power defied,
And mocked the dreams of solitary pride.
I loved to stop at every creek and bay
Made by the river in its winding way;
And call to memory—not by marks they bear,
But by the thoughts that were created there."

We must now turn to inland scenes. The various tints of change in the colour of the foliage, from the bright green of the opening buds of spring to "the sear and yellow leaf" of autumn, arise from various causes. And here we meet with an interesting analogy. The lungs of animals are employed in decomposing the air inhaled, by giving up part of its oxygen, which combines with the blood, and in turn receives from the blood a portion of watery vapour and carbonic-acid gas, which is carried off into the air by the return of the breath. This process, be it remarked, takes place in the dark, as no light can penetrate to the lungs. If, then, the reverse of this be supposed, some idea will be formed of what takes place in plants. The sap, which rises from the roots into the leaves and the young green shoots, is composed of water and carbonic acid gas, with a few other ingredients, not very dissimilar to the materials of the returning breath. This sap is spread out on

CHANGE OF FOLIAGE.

the leaves and other green parts of plants, and becomes partly decomposed in the light. A portion of the oxygen in the acid being set free from the carbon remains in the leaf, while the oxygen passes off into the air, along with a large portion of water in the form of vapour, nearly, if not altogether invisible. This exhalation of water takes place through the pores of the leaves, and other green parts, though the decomposition of the air goes on where there are no pores. The quantity of water which passes off in this way from a common-sized cabbage, has been proved to be seventeen times greater than that given off from the body of a man by insensible perspiration.

The real colour of the carbon left in the leaves, when the oxygen and the water are exhaled, is said to be dark blue rather than black. As then the tissue of cells and vessels forming the fabric of plants is of a yellow colour, and transparent, or at least translucent, the dark blue carbon, when seen through it, appears to be green. Accordingly, in the spring, the newly-expanded leaves, before they have had time to prepare much carbon, are of a yellowish tint. This is strikingly beautiful in the young leaves of the lime tree and the acacia.

SIGHTS IN AUTUMN.

When the longer nights, and decreasing power of the sun's warmth, in autumn, render the weather colder, the pores of the leaves become too feeble to open much during the day. As, too, they take in oxygen in the night, instead of this escaping, as in summer, during the day, it remains confined, and uniting with the materials in the texture of the leaves, forms various acids, which change blues into reds. Accordingly, when the dark blue carbon becomes tinged in this manner, it produces various shades of orange, and other combinations of red and yellow.

Amidst the fading foliage of October, how beautiful is the contrast displayed by our hardy evergreens !

“ O reader ! hast thou ever stood to see
The holly-tree?
The eye that contemplates it well, perceives
Its glossy leaves,
Order'd by an intelligence, so wise
As might confound the atheist's sophistries.

“ Below a circling fence its leaves are seen,
Wrinkling and keen ;
No grazing cattle through their prickly round
Can reach to wound :
But as they grow where nothing is to fear,
Smooth and unarm'd the pointless leaves appear.”

In the first rank of our evergreens the holly-tree may stand, arrayed in its polished and glassy leaves. Its ripening berries are prepared by a wise and

THE HOLLY-TREE.

bountiful Providence, as the food of many of the feathered race which now find refuge in our latitudes. The ivy too, now clothing with its luxuriant festoons the naked tree, or the crumbling wall, gives shelter to them during the chilly night, and affords a retreat



LEAVES OF THE HOLLY-TREE.

- a.* The stamens. *b.* The perfect flower. *c.* The berry.
d. Transverse section of the berry, showing the seeds.

from the rain and storm. The birds of the air are not uncared for by Him, who declares that we are

SIGHTS IN AUTUMN.

much better than they, and that those who trust in Him shall never be forgotten.

If we go from the city to the country, and from the fading leaves of the Virginia creeper, trained in a London area, to the peasant's cottage, we may still see the honeysuckle putting forth occasional blossoms, and the monthly roses wearing all their beauty as in spring and summer. The former is very irregular in its flowering, and in some instances will stand for years without showing any blossoms, while, in other cases, it will continue blowing the greater part of the summer and autumn. The berries of the honeysuckle have a nauseous, unpleasant taste; but this is relished



THE TWENTY-PLUME MOTH
The small moth is of the natural size.

by some of the fruit-eating birds. It also furnishes food for the caterpillar of a very pretty small moth,

HEDGE FLOWERS.

called by collectors the twenty-plume, the wings of which, instead of being in one piece, are divided into a number of feathers, like those of a bird. This moth is worth looking for : it is not uncommon, and may often be seen reposing with its pretty wings spread out on the glass of our windows.

Though few flowers are to be met with in the open fields, there are a considerable number still in the hedges, where the bushes shelter them, and more particularly in marshes and watery places, where the moisture keeps them fresh and growing. Amongst them the large white-flowered lady's-bedstraw may be noticed : it grows luxuriantly in chalky districts, and rises high in hedges and copses, bearing several hundred flowers on a truss. The roots do not easily bear transplanting, and those who are curious enough to grow it must collect and sow the seeds ; the plants will flower in the second year. The yellow lady's-bedstraw may still be found in flower : it has eight leaves in a whorl at each joint, narrow and furrowed. The flowers have a rather strong, but not disagreeable odour. The juice will curdle milk, and hence has been called cheese-rennet.

The various sorts of cress to be met with in ditches, streams, and moist places, are worthy of

attention from their useful qualities. The water-cress, though so well known, is not unfrequently confounded with a plant, having similar leaves, and growing in the same places—the creeping water-parsnip. The latter is by no means wholesome, though not perhaps decidedly poisonous; it may, therefore, be well to point out the marks by which the two can be distinguished. The leaves of the water-parsnip are of a lighter green than those of the water-cress, and never purple or brown like the latter. The leaflets, or divisions of the leaf, are long and narrow, saw-toothed on the edges, and pointed at the end, in the water-parsnip; while the leaflets of the water-cress are roundish, and particularly the odd one at the end of the main leaf, which is large and blunt. None of them are regularly saw-toothed, though they have a few indentations along their edges. The botanist finds many other marks of distinction, but the most certain proof, for those who have not this knowledge, is the taste; this can never be mistaken. The best water-cresses are those which grow within reach of the tides, at least of spring-tides; the salt of the sea-water apparently acting as a stimulus to improve their growth and flavour. Next to those may be preferred such as grow in very shallow streams of

THE HEDGE BIND-WEED.

clear spring-water, where the bottom consists of gravel or small boulder stones. Mud or clay does not agree with them.

The hedge bind-weed still continues to put forth occasionally its large and elegant blossoms. These, so pleasing to the eye, are looked upon by the gardener and the farmer with very different feelings; the roots becoming to them the most troublesome of all weeds. These roots, which are white, and about the thickness of a common quill, run into the soil in all directions, and are so tenacious of life, that if the least bit be broken off it will sprout, send up a stem, and form the origin of a large plant. The leaves are arrow-shaped, and come out single, on squarefoot stalks. In spots where it can be kept from spreading as a weed, it may be cultivated as a showy flower. It will thrive even in places where it can receive no sun, as in courts and areas.

One of our prettiest native plants is the lesser centaury; but its fine pink flowers only open when the weather is very bright and sunny. The seed, when ripe, sows itself, comes up before winter, and flowers the following summer. It is one of the best bitter herbs growing in Britain; but it is by no means abundant, appearing chiefly in a few detached plants.

SIGHTS IN AUTUMN.

In gardens the various species of star-flowers, or, as they are usually called, Michaelmas daisies, are most conspicuous, with the exception of the dahlias.

The Jerusalem artichoke is a species of sun-flower, with tuberous roots, not unlike those of the potatoe. It forms a tolerable vegetable for the table. The flowers, which are yellow, and about the size of those of the common dandelion, seldom blow in this country. This plant is a native of Brazil, and has no connexion whatever with Jerusalem. Its name is a corruption of that in Italian for the sunflower *Girasol*, in consequence of a similarity in the sound.

Various species of primroses now show second flowers; such as the polyanthus and auricula, which had previously flowered in spring. If the weather be open, they will, indeed, occasionally blow during a great part of the winter, though the flowers are by no means so fine as those which come with the opening year.

Now is the time for nutting. In this respect the season is one which has for many very pleasing associations. Here is a proof of this from the pen of Wordsworth:—

“ ——— It seems a day,
(I speak of one from many singled out,)

NUTTING.

One of those heavenly days that never dies ;
When, in the eagerness of boyish hope,
I left our cottage threshold, sallying forth
With a huge mantle o'er my shoulders hung,
A nutting crook in hand, and turned my steps
Toward some far-distant wood, a figure quaint,
Tricked out in proud disguise of cast-off weeds,
Which for that service had been husbanded,
By exhortation of my frugal dame.
Motley accoutrement of power to smile
At thorns, and brakes, and brambles, and, in truth,
More ragged than need was! O'er pathless rocks,
Through beds of matted fern, and tangled thickets
Forcing my way, I came to one dear nook
Unvisited, where not a broken bough
Drooped with its withered leaves, ungracious sign
Of devastation; but the hazels rose
Tall and erect, with milk-white clusters hung,
A virgin scene! A little while I stood
Breathing with such suppression of the heart
As joy delights in; and with wise restraint
Voluptuous, fearless of a rival, eyed
The banquet;—or beneath the trees I sate
Among the flowers, and with the flowers I played.”

The sight was pleasant, indeed, especially after such an effort to enjoy it; but this was not enough; for thus the poet continues :—

“ ——— Then up I rose,
And dragged to earth both branch and bough, with crush
And merciless ravage; and the shady nook
Of hazels, and the green and mossy bower,
Deformed and sullied, patiently gave up
Their quiet being; and unless I now
Confound my present feelings with the past,
Ere from the mutilated bower I turned,
Exulting rich beyond the wealth of kings,
I felt a sense of pain when I beheld
The silent trees and saw the intruding skies.”

SIGHTS IN AUTUMN.

The hazel-nut is the fruit of a wild bush, unchanged

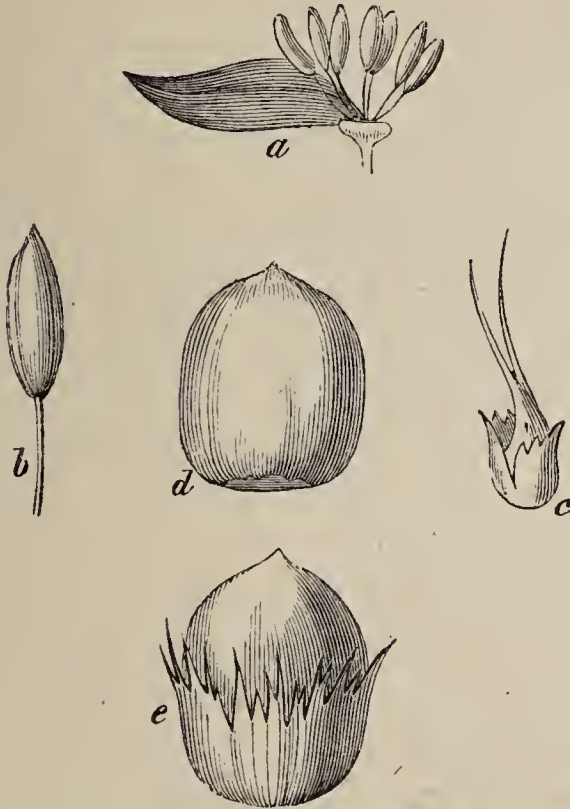


THE HAZEL TREE.

and unimproved by cultivation. It differs from the domesticated varieties only in being smaller and

THE HAZEL-NUT.

rather more hardy. The filbert is the fruit of a variety of the hazel-nut. Originally the term was applied to those kinds of nuts which have very long



FRUCTIFICATION OF THE HAZEL-NUT.

- | | | |
|------------------------|--------------------------------|--------------------------|
| <i>a.</i> Male flower. | <i>b.</i> Stamen. | <i>c.</i> Female flower. |
| <i>d.</i> The nut. | <i>e.</i> The same in its cup. | |

husks, but owing to the number of varieties obtained of late years, this distinction appears to be disregarded. Nut and filbert are almost synonymous terms,

cepting that the wild, uncultured fruit, and those varieties which most nearly approach it, are never called filberts.

The season, so apparent in the changing leaves, has now produced a decided effect on the tribes of earth and air. No longer is the bat to be seen, as evening draws over all her "dusky veil," in chase of his prey, wheeling on flickering wings, and uttering his shrill and exulting cry. The mole has ceased to throw up mounds of earth, dotting the level meads with mimic hills; he is working further from the surface. The hedge-hog is preparing his winter dwelling-place among the roots of some old tree, or at the bottom of the tangled thicket. The little dormouse has retired to his snug retreat: the squirrel is hoarding up his store of winter food. The few predatory animals which now inhabit our island become bolder, as the means of subsistence diminishes. The fox prowls at night around the barns of the farmer; and the weasel, the stoat, and the pole-cat, enter the hen-roost, intent on their feathered victims. The frog has left the sedgy margin of the pond, to bury himself deep beneath the mud. The noonday sun ceases to invite the snake to bask in its beams; the little reptile has hid himself in some secure place, till spring shall

MIGRATION OF BIRDS.

arouse him to renewed activity. The flies that have buzzed about our rooms and in the windows have almost all disappeared, and the few that yet linger about are dull and torpid.

If we look among the feathered race, we miss many of our favourites. All our summer birds of passage have left us for a warmer climate. The swift and the nightingale led the way; the blackcap and the redstart, the white-throat and the wheatear, followed. The swallows, as if loth to depart, continued long to gather night after night, in flocks of countless thousands, to roost among the sedges of the swamp, wheeling, chattering, and settling, ere they sank to sleep. At last they fixed their time; morning rose, no swallows were visible, or only a few stragglers; night came, but the reed-beds were deserted. They had commenced their flight to other climes.

The place of our summer visitors begins, however, to be occupied by a race of hardy natives of the north. Driven from the morasses and frozen lakes of the polar circle, they wing their way to more temperate latitudes. They come hither, not for the purpose of incubation, nor to build their nests and rear their broods with us, but for the sake of food, which our inlets, marshes, and lakes, and also our

hedgerows and copses, supply in abundance. Wild ducks, of various species, are now thronging towards our shores ; and the snipe is scattered over our boggy meadows and waste lands.

But though our island is subject to so great a flux and reflux of the feathered tribes, still there are many species which are stationary with us throughout the year. Flocks of rooks, intermingled with starlings, blacken the fallows in search of the buried caterpillars of wing-sheathed insects. Troops of sparrows collect round the barns, and the clear song of the robin is heard at our window.

Our winter visitors are of three kinds. Some are berry-feeders, such are the wax-wing, red-wing, and the field-fare. Others live on aquatic caterpillars and worms, which they grope for in the slimy mud, by means of their long and slender beaks constituted as feelers ; and to these they add aquatic plants, and soft fresh-water snails. Such birds are the snipe and the curlew. Others are true aquatic birds, some of which feed on fishes, the soft-bodied creatures called mollusks, aquatic plants, the produce of lakes, marshes, and inlets of the sea ; and others on grain, young corn, and grasses. Such are the duck tribe.

None of our summer birds of passage ever volun-

tarily stay with us during the winter. Many of our winter visitors, on the contrary, are identical with species permanent with us, and whose numbers are increased by hordes driven from more northern districts. As examples of this interesting fact, may be noticed the thrush and the lark, which are respectively joined in winter by flocks of their brethren from the north.

If, however, none of our summer birds of passage stay with us during the winter, we have at least many closely allied to them in habits and manners, which endure the rigours of our climate, and live during the severest seasons. What then is their food, and how do they acquire it? Let us first take the hedge-sparrow, one of the feeble-billed, insect-eating tribe. It is, indeed, true that the summer food of this bird consists of insects; and insects, no doubt, form part of its winter diet. As is well known, it is a bird always skulking in thick garden hedges, and similar places, where it finds the larvæ of insects adhering to the stems, or among the fissures of the bark. But still insects are not all it takes, for grains and seeds are also devoured. And it is not a little singular that the gizzard of this bird, and of an allied species, should approach more closely to the structure of that organ

in grain-eating birds, than is usually found in birds of its own class.

The creeper appears, on the contrary, to be strictly an insect-eating bird. Its feet and tail are peculiarly modified to adapt it expressly for the search of its food, which consists in winter of caterpillars and torpid insects, concealed in the crevices of the bark of trees, or covered by moss or lichen. Look out for this bird, and you will see it creeping spirally round and round the trunk, with singular activity, busy in the search of food.

The robin, whose lively and varied strain cheers the winter season, is at one time of the year an insect-eating, and at another a grain-eating bird. The work of incubation, and of rearing the callow brood, is carried on in orchards, copses, or thickets; the softer-winged insects and caterpillars forming, at that time, the only food both of the parents and their nestlings. At this season of the year, robins are shy and retired, and their voice of song is silent; but as soon as the summer is ended, and the leaves begin to lose their richly-tinted livery, the redbreast

“ ——— Pays to trusted man
His annual visit, and half afraid, at first
Against the window beats; then brisk alights
On the warm hearth; then hopping o'er the floor,

THE REDBREAST.

Eyes all the family askance,
And pecks, and starts, and wonders where he is ;
Till more familiar grown, the table crumbs
Attract his slender feet."

And the reason of his course is clear. The insects have disappeared, and now begins his change of diet. Occasionally, indeed, he pulls an unhappy worm out of its hole, and transfers it to his crop. The gardener, too, while turning up the soil with his spade, is sure of the company of the redbreast, with his sharp inquisitive eyes intent on every stroke, and if the spade be left for a moment, there is he perched upon the handle, on the look out for prey. Still he does not refuse grain and seeds, and as the severities of winter put such food beyond his reach, he subsists on such diet entirely. Hence he visits our abodes, and, welcome wherever he enters, whether in hall or cottage, he becomes the familiar guest of man ; till spring returning calls him back to the thicket, to meet his friends from abroad.

But again let us change the scene, and, going forth into the fields, endeavour to gain from whatever we may observe in our ramble, some pleasure and improvement. Observe those birds scattered over the field in quest of food. You would, at first, suspect them to be rooks or crows ; but you will see, by their

parti-coloured plumage, that they are distinct from both these well-known species. The flock consists of the hooded or Royston crow, which is one of our migratory birds. The hooded-crow, so called from the neck and back being of a grey colour, while the head is hooded with black, which is also the colour of the wings and the tail, visits England in October; but in the northern and western parts of Scotland it is indigenous, remaining there throughout the year, and breeding.

The hooded-crow makes its nest in tall trees, among the precipices of rocks, or the cliffs which overhang the sea, as the locality may render most convenient. The nest is formed of sticks, and lined with soft materials; the eggs are four or five in number. During the breeding season these birds are very destructive, both to the eggs and young of the red-grouse of the moorlands, and, like the raven, they will attack young lambs, or weakly sheep. They also resort for food to the sea-shore, where mollusks and other marine animals are greedily devoured, together with substances thrown ashore by the tide.

Mr. Selby states, that he has repeatedly observed one of these birds soar to a considerable height in the air, with a cockle or mussel in its bill, and then drop it on the rock, in order to obtain the inclosed mollusk.

Such an act seems to infer an instinct bordering on intelligence, and to imply a notion of cause and effect. It surprises us, because we scarcely expect such an act from a bird; but appearances are not always to be trusted. The beaver, for instance, who constructs his dam and cabin, and who labours, with the rest of the community, in a common work for the general good, seems, in all this, to have a knowledge of cause and effect, and of power and time. Yet the beaver is among the least intelligent of animals, and is only directed by that mysterious guide and impulse, implanted in its very nature by the Creator, which, wanting a better term, we call instinct. Just, then, as the bird builds her nest, and the bee her cells, so the crow may be led, without any effort of reasoning, to soar aloft with a hard shell, and drop it on the rock, in order to break it in pieces.

The hooded-crow, though indigenous in Scotland, is, strange to say, only a temporary visitant to our southern portion of the island, departing from our shores on the return of spring. During its stay, it frequents extensive downs, the borders of the sea, feeding like the rest of its genus. As, however, there is no visible diminution of the numbers of these in the districts of Scotland where they abound, it has been

inferred that our winter visitors of this species come from Sweden, Norway, and other countries of Northern Europe: a fact which is almost proved by their generally arriving with the first flight of woodcocks, which birds always take advantage of a north-eastern breeze for their journey.

Look over head: high in the air, a flock of wild geese are sailing along on vigorous pinions, and in two lines converging to a point, so as to form two sides of an acute triangle. Sometimes, however, they sail in single file, forming one long line, and sometimes they change from one figure to the other.



NOVEMBER.

NOVEMBER.



“ Where are the flowers, the fair young flowers, that lately sprung and stood,
In brighter light and softer airs, a beauteous sisterhood?
Alas! they all are in their graves—the gentle race of flowers
Are lying in their lowly beds, with the fair and good of ours:
The rain is falling where they lie, but the cold November rain
Calls not from out the gloomy earth the lovely ones again.”

BRYANT.

How rapidly the fair face of nature has of late been changing! The insects that fluttered in the bright sunshine of summer are gone. The birds that carolled so merrily among the green leaves of that season have taken their flight. The summer flowers that bloomed so gaily in the woods, the fields, and the gardens, have passed away. All, all tell us that this is a world of change; that here we have no continuing city; that the only true wisdom is to seek, through the atoning sacrifice of Christ, and the purifying operation of the Holy Spirit, a title to, and a meetness for, the inheritance which never fades.

We miss, in our walks, the lilies and roses of the

SIGHTS IN AUTUMN.

garden, the buttercup in the meadow, and the honeysuckle in the hedgerow; but there are still a few blossoms, reminding us that the same all-bountiful Creator, who clothes the lilies of the field with glory surpassing that of Solomon, directs all the circumstances of the closing autumn, and assigns to the coming winter its proper place in the course of the revolving seasons.



SAFFRON CROCUS.

We may now look for the autumnal crocus, remembering that the wild plants now in flower are chiefly those that either blow a second time, or have continued to blow for several months successively. Few bloom only at this season, except certain garden

plants, introduced from distant regions, whose climate

TWO BROODS.

differs from ours. The second flowering of wild plants, such as the primrose, the germander speedwell, and the sweet violet, is evidently designed by Providence to furnish a greater profusion of seeds, lest the first, from any cause, should be too scanty for the continuance of the species.

In the same way we observe many insects and birds produce, during the season, two or more broods, while others have only one. Thus the swift and the nightingale have but one brood, while the swallow and the blackcap have two. The peacock-butterfly and the silver-streaked fritillary have also only one brood, while to the tortoiseshell-butterfly and the cabbage-butterfly two are allotted.

One reason for this difference may be, that a greater number of individuals of those which are double brooded may be required in the economy of creation than of others. The fact of their being actually more numerous is fully borne out by observation, and the design of its occurrence is worthy of the all-wise God. The later blowing flowers, however, owing to the coldness of the weather, do not so readily ripen as those of the first flowering, and may be intended rather to continue than to multiply the species. A similar circumstance holds of late broods of birds and insects,

SIGHTS IN AUTUMN.

whose young do not so readily thrive and come to maturity as in the early part of the year. Caterpillars have often been observed prevented by cold weather from undergoing the requisite transformations, prior to becoming butterflies; and young swallows, black-caps, and other double-brooded migrating birds, also too immaturely fledged and feeble to accompany their parents to warmer winter climes. Even the hardy primrose, though it flowers now, does not readily produce seed sufficiently ripe to germinate when sown.

One of our prettiest shrubs, the strawberry tree, naturally blows only at this season. It is occasionally found in a wild state in the south of Ireland, where, from the moisture and mildness of the climate, it thrives luxuriantly. Whether it was originally introduced there as an ornamental shrub, or is really a native product, cannot now be satisfactorily ascertained. This beautiful evergreen has the peculiarity, rare in this country, though common in the tropics, of having both flowers and fruit at the same time.

The blossoms of November in due time wither, and are succeeded by berries, at first small and green, and indeed continuing so for nearly twelve months, the summer's sun producing on them apparently little influence in increasing their size or hastening their

THE STRAWBERRY TREE.

maturity. But when November again returns, they ripen rapidly, and, at the same time, a fresh show of blossoms appears side by side with the ripe fruit. The



ARBUTUS UNEDO.

blossoms are wax-like and bell-shaped, hanging in pretty clusters, not unlike some species of heath. The berries resemble a small strawberry in colour and appearance; but instead of the rich flavour and

juiciness of the strawberry, they are dry and insipid. Hence the Romans are said to have given it the name of *Un-edo*, meaning, "I eat one;" this being sufficient to prevent a trial of more. When, however, they are fully ripe, and are of a purplish red, they become more mellow, and several of them may be eaten with relish. They are not unwholesome. In the comparatively dry climate of London, though the strawberry tree is very common in gardens and shrubberies, the berries very frequently fall off before they arrive at maturity. Well watering artificially would probably prevent this, as the shrub is fond of moisture.

The beauty of the garden and the greenhouse, at this season, is the Chinese gold-flower, of which we have numerous varieties; all imported at great expense from China till within the last few years, when many new varieties were produced from seeds saved in this country. These bid fair to rival in number the varieties of dahlia and of heartsease.

The leaves which, seared and withered, remained on the branches of the forest trees, are at length stripped off by the rude wind. Yet still they are of great service. They cover deep the tender shoots, and the various plants that love the woodland glade; form a natural matting to protect them from the severities of

the season, and then decaying, as spring comes on, become resolved into a light mould for their nutriment—a wise and beautiful arrangement of the God of providence.

Processes of great interest are thus advancing, though November be a month of fogs and mists, and “driving sleets deform the day.” The trees have lost, or are quickly losing, their foliage; yet new buds—embryo leaves, in fact—curiously folded up and protected by a close envelope, have been pushed forth, waiting to be fully developed in the breath of spring. Others, indeed, have passed away, like the frail insects of the summer, but not until they had scattered their seeds abroad, thus making provision for future products of the vegetable world. Shall we then say that death reigns at this season over the meads and woodlands? No! It is only a needful repose—a quietude truly salutary.

Nor are the tuneful mute. The swallow, it is true, no longer “twitters on the straw-built shed;” the thicket resounds no more with the melody of the nightingale; and the strains of the thrush and black-bird have ceased. But listen! The song of the robin is clear and lively; the short shrill pipe of the wren occasionally breaks on the ear; the sparrows on the

SIGHTS IN AUTUMN.

eaves are chirping ; and if no full chorus of music delight us, as we pass through leafless groves, and along hedgerows, ruddy with the clustering berries of the hawthorn, we hear, at least, the calls of troops of birds, expressive of contentment, and the chattering of the restless magpie, mingled with the caw of the rook, whose black squadrons are scattered over the fields.

At this season, many birds, which during the summer were only associated in pairs, now collect into flocks of considerable numbers, and rove through the country in quest of food. Of this singular fact, the skylark is an instance. These well-known songsters, to whose varied and delightful minstrelsy all must listen with pleasure, now congregate in immense troops, spreading over ploughed lands and turnip-fields, searching for grain, seeds, and tender leaves.

All are not natives of our island, for their numbers are increased by accessions from the northern parts of the continent, driven from their own countries by the inclemency of the season. Greatly esteemed, as they are, as delicacies for the table, hundreds are now devoted to slaughter ; the gun thins their ranks, but the net still more so ; and whole flocks, while sleeping, unsuspecting of danger, are captured during the dark-

ness of the night. From the neighbourhood of Dunstable, as well as from Holland, the London markets are supplied. Great, however, as is the destruction of these birds at this season, there is no perceptible diminution of them during spring and summer; we may then walk through the clover lands and corn-fields, and hear and see them in abundance.

Another beautiful bird, which now collects into flocks, is the yellow hammer. It may be observed flitting along the hedgerows, and crowding the farmer's stack-yard, to which it is attracted by the scattered corn. The chaffinch presents another example; but it is remarkable that the males of this species form flocks distinct from those of the females; the latter being very few in number, most having migrated, while the males continue with us. In Northumberland and Scotland, the separation takes place about the month of November, and from that period to the return of spring, few females are to be seen, and always in distinct societies. On the contrary, according to Mr. Selby, the males remain, and are met with during the winter in immense flocks, feeding with other grain-eating birds, in the stubble lands, as long as the weather continues mild, and the ground free from snow; and resorting, when storms approach,

to farm-yards, and other places of refuge and supply.

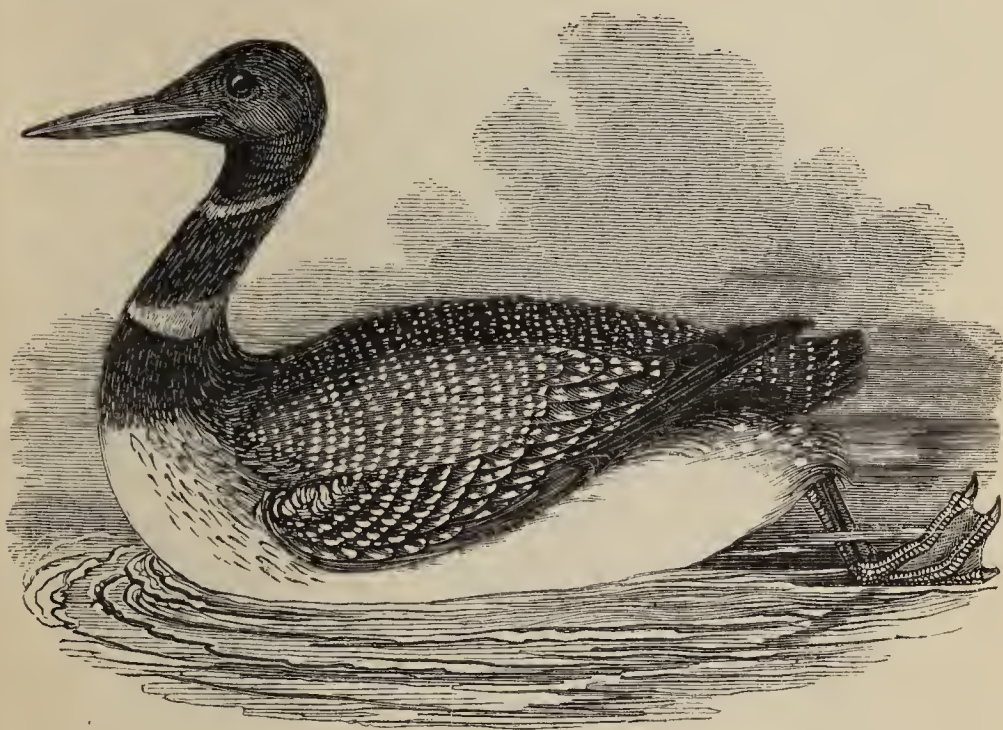
There is reason to believe that the sexes are separated in other instances. So it is said to be with the snow bunting, which visits us from the north in winter. The first flights of woodcocks which arrive, staying only a few days to recruit their strength, and then passing southwards, consist almost exclusively of females; while the later flights, which remain with us during the winter, are as exclusively composed of males.

It may be asked, Why do birds which live only in pairs during the summer, congregate at this season of the year? A satisfactory answer is not easy, and still less so would be a reply to the question, why, in some species, do the sexes form distinct flocks, of which those composed of males live with us through the winter, while those consisting of females migrate southwards? Attempts have, indeed, been made to answer such inquiries, but, as yet, they have signally failed.

Among the rarer birds which now visit our coast may be noticed the great northern diver. This beautiful species, so destructive among fishes, is a native of the polar regions, and also of Norway, Sweden, and Russia. It is remarkable that those found in the

GREAT NORTHERN DIVER.

bays of Scotland, and the northern portions of our island, are all, or nearly all, the young of the year, in that state of plumage in which the older naturalists considered them to form a distinct species. Adult



GREAT NORTHERN DIVER.

birds, having the plumage of the upper parts tessellated with square white spots on a black ground, are very seldom to be seen. The Frith of Forth is a favourite resort of these young divers, in consequence of the

SIGHTS IN AUTUMN.

shoals of herrings which congregate there, and furnish a sumptuous repast also for other oceanic birds. The propensity of the young to wander to a greater distance than the adults from their native shores, which is



THE GANNET.

remarkable in the instance of the northern diver, is common to many other species.

It might be supposed that, with an exhaustless supply

THE GREBE.

of food around, and attired, as they are, in deep, warm, water-proof plumage, none of our indigenous oceanic birds would migrate to more southern regions. Yet many do so, visiting more congenial seas during the winter, and returning in spring to their old haunts, for the purpose of breeding and rearing their young. Such is the case with the gannet, or solan goose, which during the summer, covers in flocks the Bass Rock, the isle of Ailsa, St. Kilda, and other rugged sea-girt strongholds—its breeding places from time immemorial; but, on the approach of winter, the gannet leaves our seas, and migrates southwards. The greater proportion of these birds are now to be found in the Bay of Biscay, along the coasts of Spain and Portugal, and throughout the Mediterranean. There they find an abundant supply of anchovies and sardines, both species of the herring genus, which constitute a favourite food.

At this season the grebes, which are rather the tenants of large rivers and lakes of fresh water than of the sea, present a very remarkable difference in their plumage from that in which they appear during the summer. While the breeding season continues, most have the head adorned with beautiful tufts, or frills of silky feathers, and producing an elegant

SIGHTS IN AUTUMN.

appearance. The species have received their distinguishing titles, as the horned grebe, and the crested grebe, from the character and position of these plumes.

To none, however, are these terms now applicable; for the ornamental crests and plumes are lost, and the

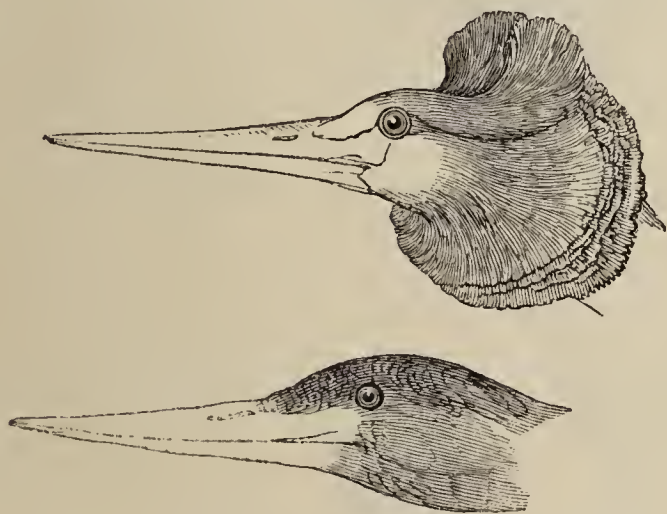


CRESTED GREBE

head is covered with close short feathers. Let the following sketches be observed, and the contrast between the head of one of these birds in the attire of summer, and in the simple clothing of winter, will at once be perceived. Compare this with the accession of dense feathers, in which the head and feet of the mountain-

THE GREBE.

bred ptarmigan are now clothed, and a special provision will appear for different circumstances. In the one case, Providence designs the protection of the bird against the cold of a northern winter; in the other, a gay and ornamental dress is lent for a short season. In the former, He who gives the female bird in many



HEAD OF THE CRESTED GREBE.

Upper figure—Summer plumage.

Lower figure—Winter plumage.

cases the colour of the earth on which she sits as a protection for herself and her young, appears to afford a defence against rigorous climes; in the latter, He who gives so much beauty to his creatures, ordains that, in the time of nature's rejoicing, the very plumage of the feathered race should bespeak the influence of the

months of song, and of preparing for a future progeny. Temporary ornamental plumes, indeed, are common to



many birds; and in some, as in the whidah bird of Africa, the difference between the summer and winter dress is so great, that the bird might well be taken for two distinct species.



HEAD, LEG, AND FOOT OF THE PTARMIGAN
IN SUMMER.

To return to the ptarmigan: it has been shown how some species lose ornamental feathers in winter; and it may now be stated, that others acquire an addition to their dress at this season, when it is needed. During the summer, the leg is covered with close hair-like feathers extending as far as the toes; but

THE PTARMIGAN.

as winter advances, these feathers are greatly augmented, until they so clothe the toes as completely to hide them, and the whole leg is rather like that of a hare than a bird. The whole of the plumage, moreover, has now become deeper and fuller, and assumed a sunny whiteness. But in the spring, a variegated lining of mingled browns and black will take the place of the pure white, and the warm clothing of the winter will be exchanged for a thinner and lighter garment.



HEAD, LEG, AND FOOT OF THE PTARMIGAN
IN WINTER

Among the insect tribes great changes are now taking place. To numbers, the present month is the last of their existence. The butterfly has disappeared; for it accomplished the purposes of its being. It enjoyed its hours of sunshine, laid its eggs, and from these came the caterpillars which are now in the chrysalis state, waiting the season of their change. Some are enveloped in a silken mummy case; others, suspended by a silken thread, hang in quietude, in places of safety, protected from the extreme severity of the weather, until the warmth of spring shall call them forth. Many insects, however, conceal themselves in chinks and fissures of old trees, or between the bark and wood; others burrow into the earth, penetrating to a considerable depth; and others, like the bee, have retired to their hive—a winter dormitory for themselves, and the nursery of their larvæ.

The grubs or caterpillars of many species do not assume the chrysalis state for a year or even more. These bury themselves in the earth, and well it is for the farmer that the rook is busy in his corn-fields, dislodging them from their hiding-places, and devouring them as delicate morsels. Some insects require only a transient gleam of sunshine, a bright interval of warmth, to rouse them to a state of transient activity.

CHRYsalISES.

When all is dreary, and even the snow is on the ground, the feeble beams of the noon-day sun will call forth myriads of gnats, which, in sheltered situations, may be observed merrily dancing in the air.

“ ——— They mix and weave
Their sports together in the solar beam,”

as if rejoicing in the promise of a brighter day.

The shores of the ocean still afford much attraction to the intelligent observer. The rough waves cast up, on each returning tide, fragments of zoophytes, torn from their native rocks, shells, and other treasures of the deep, all of which deserve examination. A single shell may afford much pleasure. Wordsworth says :—

“ ——— I have seen
A curious child who dwelt upon a tract
Of inland ground, applying to his ear
The convolutions of a smooth-lipped shell;
To which, in silence hushed, his very soul
Listened intensely; and his countenance soon



AN UNIVALVE SHELL.

SIGHTS IN AUTUMN.

Brightened with joy, for murmurings from within
Were heard—sonorous cadences; whereby
To his belief the monitor expressed
Mysterious union with its native sea.
Even such a shell the universe itself
Is to the ear of faith; and there are times,
I doubt not, when to you it doth impart
Authentic tidings of invisible things,
Of ebb and flow, and ever-during power.”

In shells, as in every other product of Divine power and wisdom, are results which are truly amazing. Some are porcellainous, formed of carbonate of lime and a small quantity of animal jelly; of which the cowry and volute are examples. Others have a smaller proportion of the former, which, instead of being simply cemented by the latter, is intermixed with, and serves to harden a substance that is membranaceous or cartilaginous. Familiar instances of this appear in the river mussel and the oyster. The little creatures, called mollusks, that inhabit the shells which are stratified, add to them every year a stratum of carbonate of lime secured by a new membrane, and from this it is easy to determine the age and growth of the animal.

A mollusk, in its first stage of life, is uniformly furnished with a shelly covering. This increases gradually by a substance which exudes from the aperture or hinge round the circumference of each valve of the

shell. The meaning of the term valve will at once be obvious by a reference to the oyster, which has a shell of two valves. The diversified exterior of shells depends on various and curious arrangements; the necks of the mollusks being supplied with pores from which issues a colouring fluid, presenting, as in the oyster and others of mother-of-pearl like substance, a succession of rich and changeable colours, that,

“ Flying several from each surface, form
A trembling variance of revolving hues,
As the site varies in the gazer’s hand.”

Those who have walked, with intelligence, along the shore of the sea, cannot but have noticed that the shells which lie scattered over the beach are often covered with little creatures called zoophytes, while others may be seen adhering to the broad fronds of floating seaweed, or fixed upon jutting rocks, upon stones, and water-worn pebbles. Sometimes these have been regarded, but erroneously, as belonging to the tribe of sea-weeds, and consequently as vegetable productions. Delicate in structure, and elegant in form, they spread themselves, and their wavy branches are adorned with miniature vases and cups of various patterns. An examination of them cannot fail to please.

We have in fresh water a minute creature, a kind of

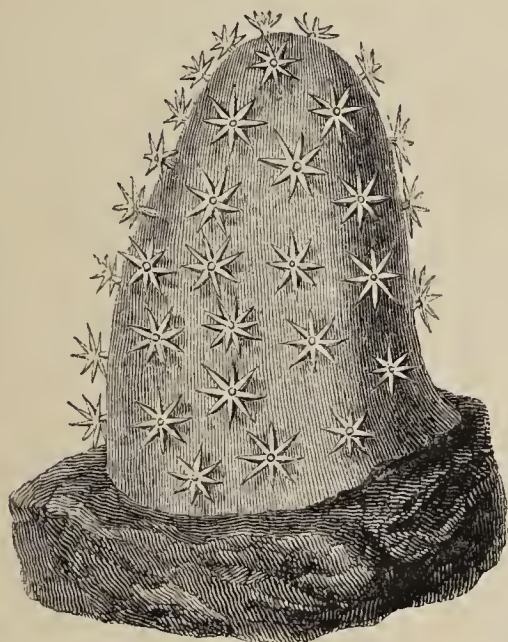
living tube, called the hydra. This animal is free, and capable of detaching itself from the leaf to which it adheres, and of moving to another station. Suppose, then, one of these polypes, as they are called, to secrete a calcareous substance, and we have a creature in very different circumstances. The power of secretion just referred to, leads to results which are exceedingly curious. Sometimes an expansion takes place which is common to many associated polypes. A branching calcareous tree firmly fixed to the rock, is thus secreted, and the polypes, with their expanded arms, resemble flowers. So it is in the red coral of commerce. The red axis is the stem round which the gelatinous expansion spreads like a rind, the polypes representing flowers.

In some creatures, as the *Cydonium*, a tough body, containing numerous canals, is studded with polypes, like hydras. These are all seated in little cells on the surface, from which they can protrude, and expand their arms.

Sometimes we are presented with simple or branched horny tubes, from the open extremities of which, the polypes emerge and expand their arms. One species, *Tubularia indivisa*, (see p. 278,) found on our shores, resembles a portion of straw, two or three inches long,

CURIOUS POLYPES.

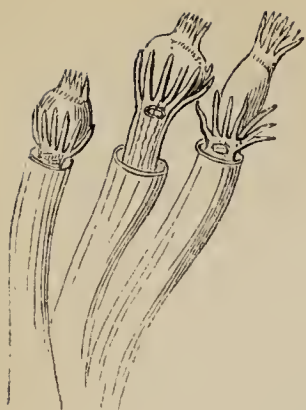
from the orifice of which protrudes the polype. This creature has two circlets of arms, one immediately surrounding the mouth, the other lower down and near a second aperture, communicating with the body inclosed



CYDONIUM.

in the tube. The space between these two circlets is perpetually changing its form, being alternately distended with some fluid, and alternately contracted.

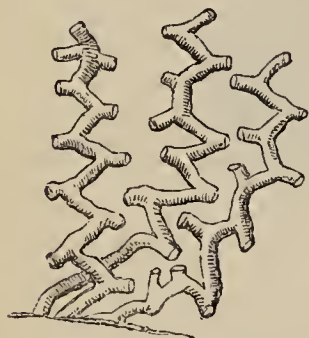
It is remarkable, that when specimens are taken from the sea, the head falls off or perishes. If, however,



TUBULARIA INDIVISA.

the animals be kept in their congenial fluid, a new head is gradually produced from the pulp within the sheath. The head is also reproduced when the stem is cut into two parts, and thus the creature may be multiplied. The tubes of the *Tibiana fasciculata* are zigzag, and at each angle is a little projection, for the polypes to protrude, as in the engraving.

In another genus the stem is branched; the ends of the branches are of the form of a bell, in which the polypes reside, as in the *Campanularia*, (see p. 280.) Sometimes there are found a horny stem and branches, slender and flexible, and apparently joined at regular intervals. The joints are, however, mere breaks in the continuity of the sheath, occasioned by periodical interruptions in its growth. At the



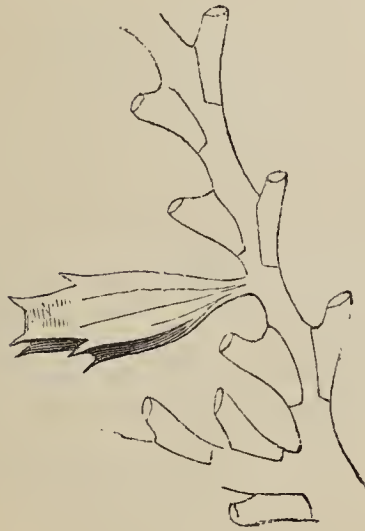
TIBIANA FASCICULATA.

extremities, or along the sides of the branches, are the cup-like cells of the polypes, arranged in definite order. So it is in the *Sertulariæ*.

CURIOUS POLYPES.



SERTULARIA MARGARITA.



A MAGNIFIED PORTION OF SERTULARIA MARGARITA :
Showing the polype cell and egg vesicle.

SIGHTS IN AUTUMN.



CAMPANULARIA URNIGERA,
Showing three polype cells and an egg vesicle.

In other instances we observe the polype cells resting closely on the branch, as seen in the following engraving,



TEUTHARIA ARTICULATA.

CURIOUS POLYPES.

The growth of these beautiful zoophytes is extremely rapid, and their duration often short. Some appear to have but a summer's existence ; many are probably annual ; and those which attach themselves to sea-weeds cannot prolong their existence beyond that of the frond to which they are affixed. But those which root themselves on rocks, stones, and shells, are doubtless

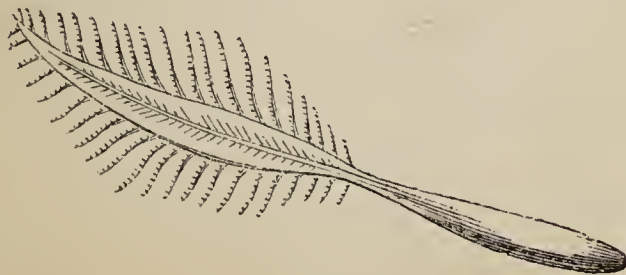


THUIARIA ARTICULATA.

A portion magnified.

less perishable, and may, perhaps, continue for several years to develop new branches and new polypes.

Some polypes are termed sea-pens, from their like-



PENNATULA.

SIGHTS IN AUTUMN.

ness to a quill feather, a double set of branches, on the same place, occupying both sides of a shaft. Each branch is furnished with a row of polypes, resembling the barbs composing the vane of a quill. Numbers are found floating on the ocean.

“ So He ordain’d, whose way is in the sea,
His path amidst great waters, and His steps
Unknown;—whose judgments are a mighty deep,
Where plummet of archangel’s intellect
Could never yet find soundings, but from age
To age let down, drawn up, then thrown again,
With lengthened line, and added weight, still fails;
And still the cry in heaven is, Oh the depth !”

But wherever we are, whether in the garden or the field, or on the coasts of our land, the intimations of the season are still the same. It is emphatically a time of change—of visible and rapid change, teeming therefore with important instruction for every one of us. Every season we pass, leaves us one season less. Every day, and hour, and moment, as it passes, diminishes, in the same proportion, the term of our mortal existence. To adopt the language of the Rev. John Foster:—
“ Life, in the case of a being that should be certainly immortal, might be considered as an absolute possession. But with us, life is expenditure ; we have it but as continually losing it ; we have no use of it, but as continually wasting it. Suppose a man confined in some

fortress, under the doom to stay there till his death ; and suppose there is there for his use, a dark reservoir of water, to which it is certain none can ever be added. He knows—suppose that the quantity is not very great—he cannot penetrate to ascertain how much, but it *may* be *very little*. He has drawn from it by means of a fountain a good while already, and draws from it every day ; but how would he feel each time of drawing, and each time of thinking of it ? not as if he had a perennial spring to go to ; not, ‘ I have a reservoir—I may be at ease.’ No ! but ‘ I had water yesterday ; I have to-day ; but my having had it, and my having it to-day, is the very cause that I shall *not* have it on some day that is approaching ; and at the same time I am compelled to this fatal expenditure !’ So of our mortal, transient life ! And yet men are very indisposed to admit the plain truth, that life is a thing which they are in no other way of possessing, than as necessarily consuming ; and that even in this imperfect sense of possession, it becomes every day *less* a possession !”

What then is our duty in such circumstances ? It is to “ seek first the kingdom of God, and his righteousness.” Interested in Christ, by the exercise of faith, our sins will be pardoned, our souls sanctified, and we shall have a title to everlasting life. Thus we

SIGHTS IN AUTUMN.

shall be prepared for every change, and the last we can experience will be the happiest of all. For “absent from the body,” we shall be “present with the Lord.” And to see Christ, and be like him, is perfect felicity.

Reader, is this your condition? If it be, you will ascribe it with heart-felt gratitude to the praise of the glory of the grace of God; if it be not, flee without delay to Christ, lest, dying unprepared for a change which *must* come soon, and *may* come suddenly, you should experience “a fearful destruction.”

Sights in Winter.

SIGHTS IN WINTER



THE RELIGIOUS TRACT SOCIETY,
56, PATERNOSTER ROW, AND 65, ST. PAUL'S CHURCHYARD;
AND SOLD BY THE BOOKSELLERS.



DECEMBER.



‘ This is the eldest of the seasons : he
Moves not, like Spring, with gradual step, nor grows
From bud to beauty, but with all his snows
Comes down at once in hoar antiquity.
No rains, nor loud proclaiming forests flee
Before him, nor unto his time belong
The suns of Summer, nor the charms of song,
That with May’s gentle smiles so well agree.
But he, made perfect in his birth-day cloud,
Starts into sudden life with scarce a sound,
And with a tender footstep prints the ground.”

PROCTOR.

THE earth, ceaseless in its revolutions, is now approaching the point which is nearest to the sun. We have short days, and the brief period of sunlight is insufficient to continue the temperature of the preceding season. Another, therefore, invites our contemplation ; for

“ What time the once unnoticed tide,
Fast swelling, rolls a torrent wide ;
What time the fields are frequent strown
With scattered leaves of yellow brown ;
What time the hawthorn berries glow,
And, touched by frost, the ripened sloe

SIGHTS IN WINTER.

Less crudely tastes; and when the sheep
Together in the valleys keep;
And all the smaller birds appear
In flocks, and mourn the altered year;
The careful rustic marks the signs
Of winter."

In observing the natural world, there is much that is utterly inexplicable to the feeble powers of fallen man. Of this we are reminded at the present season. We cannot tell, for example, why so many plants now put forth their wintry blossoms, as if to attract the sunshine to the sheltered nooks where they nestle from the cold. We cannot tell why the Glastonbury thorn sometimes blooms at Christmas, while the hawthorn does not flower till the middle or the end of May. We cannot tell why the elder shows its buds bursting into leaf, while the apparently more hardy oak is not in bud till late in spring. We cannot tell why the snow-drop shoots up amidst frost and snow its tender stem and delicate blossoms, while the more robust lily, with a stem thicker than a walking-stick, and a large hardy-looking flower, dare not shoot into blossom before the full sunshine of summer. But proofs of the same ignorance, as we gaze on the works of God, are abundant: let them, then, teach us how little, comparatively, we know, and lead to true humility of spirit.

THE CHINESE PRIMROSE.

The Christmas rose, which invites our notice, is not very much like the queen of flowers, though it bears its name, except in the pale rosy white of its bunch of blossoms. Sometimes they expand in mid-winter, but they commonly wait till May before blowing. The dark dusky colour of its rootstock has led to its being called by the name of the black hellebore, which is poisonous, but, in many cases, useful for medical purposes. The ancients employed it in cases of madness ; but it is seldom used by our own practitioners, except as an ointment.

The Chinese primrose, a flower recently introduced, has become a general favourite for pots in windows ; but, unless in very mild seasons, it will not answer in open gardens. The common colour is a pale tint, somewhat between pink and lilac, though some varieties are darker, and some quite white. Its gay appearance in winter, when few flowers are to be seen, makes it a valuable addition to our old stock. The habit, adapted to the climate of China, of flowering in the Chinese spring, causes this pretty flower to blow in our early winter, in the same way as the chrysanthemums and camelias, without forcing, and with nothing more than protection from cold. Any increase beyond the temperate is sure to prove injurious. Too much moisture

SIGHTS IN WINTER.

also greatly tends to prevent a fine bloom, and renders the plants bloated and dropsical.

Another flowering plant from the far east, is the Japan corchorus. It is more hardy than the preceding, and flowers out of doors during a great part of the winter, as well as at other seasons, in situations where it thrives. In some soils and aspects it will not flower at all; in others it blows most profusely. Its yellow flowers resemble those of the dandelion in miniature.

The garden anemone is a very gay and showy flower at this season, if it has been planted at the proper time. It is surprising that its beauty has not rendered it more common than it appears to be; but, perhaps, the reason is, that few take much pleasure in their gardens in the winter, when it is too damp and cold to walk about with comfort. Were an effort made to grow this plant in pots for rooms, there can be little doubt that it would prove successful; it would certainly be a fine ornament to our windows, and would harmonize well with the Chinese primrose and Christmas rose.

The common primrose, now partially in flower out of doors, is sometimes reared in pots to flower within doors. It is a pretty flower; its delicate odour reminding us of the budding of trees in the spring, and all their accompaniments of brightening skies and singing birds.



DECEMBER.

The polyanthus may also often be seen in bloom, as well as the mezereon and the daisy. And, in sheltered borders, the snowdrop, towards the end of the month, peeps timidly forth, and discloses its bell-like blossoms.

We pass now from these to other objects. See there the hardy furze, which covers the common, is putting forth its golden blossoms, in beautiful contrast with the green of its thorny stem. This shrub, which is very abundant, forms in summer a fortress, guarded by an array of spears, to which many of our smaller birds repair to build their nests. In winter, it offers, beneath its dense canopy, an asylum for various animals, which there find security and concealment. There the hedgehog often hybernates, as the torpid state of many creatures in winter is commonly called ; and field-mice and shrews make their burrows. There, too, the vipers crowd together for the sake of mutual warmth, in some snug recess, and pass the colder months. There also the lizard secures a dormitory.

It may be, however, that our walks and observations at this season will be impeded. Rain may fall heavily, for much humidity is frequently experienced. Constantly afforded to the air by evaporation, it is returned to the earth chiefly, though not entirely, by the agency of rain. According to the theory now

SIGHTS IN WINTER.

prevalent, rain is supposed to result from the mingling together of great beds of air of unequal temperature, differently stored with moisture. The following rhymes are popular in the West of England, and they accord with the theory of philosophy which has been commonly adopted:—

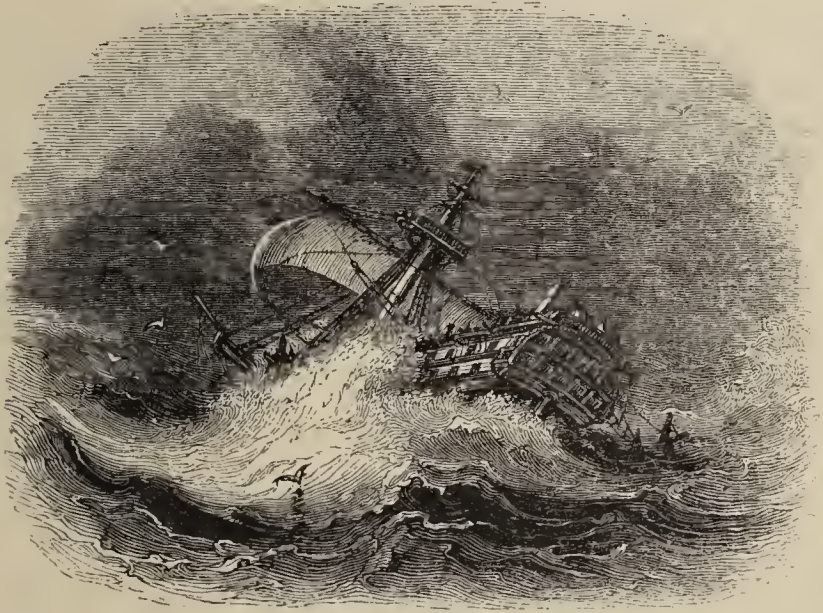
“ The south wind always brings wet weather ;
The north wind wet and cold together ;
The west wind always brings in rain ;
The east wind blows it back again.”



To the power of the wind the attention will now perhaps be often directed. As it whistles around, or its loud rushings and blasts are heard, we shall think of

WIND.

the mariners wafted onwards by a favourable breeze, suffering from the fury of the storm, or experiencing the bitter calamities of shipwreck. Such circumstances



claim our sympathy ; and those who sail on the mighty deep should be remembered when we present our petitions at the footstool of the “ Preserver of men.”

“ A winter night! the stormy wind is high,
Rocking the leafless branches to and fro:
The sailor’s wife shrinks as she hears it blow,
And mournfully surveys the starless sky.
The hardy shepherd turns out fearlessly
To tend his fleecy charge in drifted snow;
And the poor, homeless, houseless child of woe
Sinks down, perchance, in dumb despair to die!

SIGHTS IN WINTER.

Happy the fire-side student ; happier still
The social circle round the blazing hearth ;
If, while these estimate aright the worth
Of every blessing which their cup may fill,
Their grateful hearts with sympathy can thrill,
For every form of wretchedness on earth."

The poet here reminds us that moisture cannot always descend in rain. The region of air in which atmospheric beds of unequal humidity and temperature unite, is subject, like the surface of the earth, to various changes. During the season of winter, when the atmosphere frequently sinks below the freezing point of water, the particles of moisture must, in some stage or other of their descent, become frozen, and form flakes of snow. These display innumerable varieties of the most beautiful forms, and at length reach the ground in the same state, when the temperature necessary for their first formation continues to the surface of the earth.

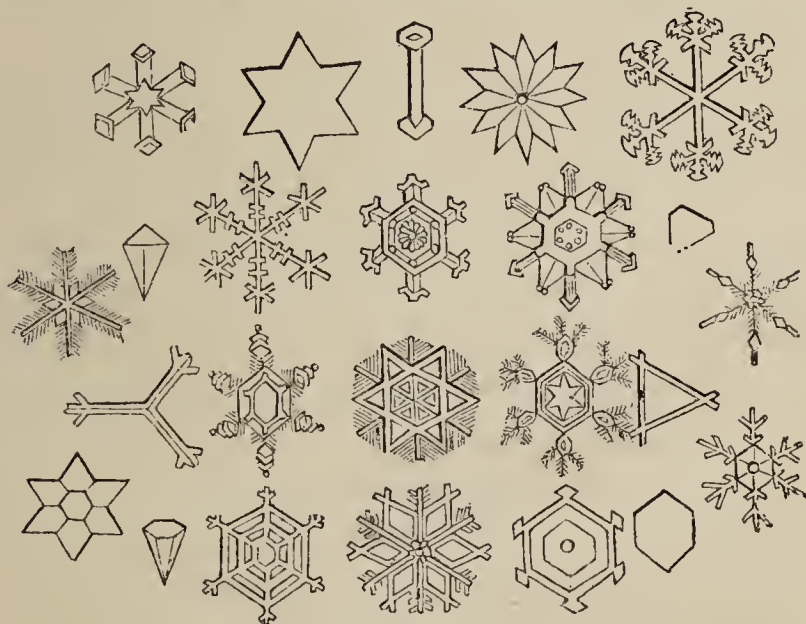
Cowper has thus admirably described the falling snow :—

" I saw far off the weedy fallows smile
With verdure not unprofitable, graz'd
By flocks, fast feeding, and selecting each
His fav'rite herb : while all the leafless groves
That skirt th' horizon wore a sable hue,
Scarce noticed in the kindred dusk of eve.
To-morrow brings a change, a total change!
Which even now, though silently perform'd,
And slowly, and by most unfelt, the face
Of universal nature undergoes.

PARTICLES OF SNOW.

Fast falls a fleecy show'r : the downy flakes
Descending, and with never-ceasing lapse,
Softly alighting upon all below,
Assimilate all objects. Earth receives
Gladly the thick'ning mantle, and the green
And tender blade, that fear'd the chilling blast,
Escapes unhurt beneath so small a veil."

Snow, when examined by the microscope, is found to be composed of an immense number of separate transparent crystals of ice. In the Polar regions their



SNOW CRYSTALS.

variety seems endless; and while a given character pervades the whole, the groupings produced by combination disclose arrangements uniting at once the most perfect forms of regularity and beauty. These

SIGHTS IN WINTER.

delicate varieties are, however, confined to the regions of the north, and only in very rare instances are some of the less complicated crystals to be met with in the temperate climates of the earth.

After a copious fall of snow, an attentive observer may find in the scenery, to which it imparts so peculiar a character, much to exercise and delight his mind. Sometimes, when the sun shines clearly, and the temperature is too low for any moisture to be deposited, the level surface may be found to be sprinkled with small polished plates of ice, which refract the light in colours as brilliant and varied as those of dew. At such times, there are also to be discovered on the borders of frozen pools, and on small bodies which happen to be found in the ice, and project from the surface, groups of feathery crystals of a curious and delicate structure. Almost from the moment that snow alights on the ground, it begins to undergo certain changes, which usually end in its being more solidly crystallized than at first. The peculiar adhesive quality of snow, at particular times, arises from its needley crystalline texture, aided by a degree of moisture, which afterwards freezes in a mass. On some occasions snow exhibits beautiful blue and pink shades at sunset.

Snow storms sometimes present a luminous appear-

HAIL.

ance. One occurred some years ago, to a party on Lochawe in Argyleshire, which imparted to the glassy surface of the lake, the boat, their clothes, and all the surrounding scenery, a luminous appearance, like a huge sheet of fire ; nor was this all, for the exposed parts of their bodies seemed to burn, though of course there was no feeling of warmth. When they applied their hands to any of the melting snow, the luminous substance adhered to them, as well as the moisture, and this property was retained by the snow from twelve to fifteen minutes.

A further crystallizing of the descending atoms than that which takes place in snow appears to be the cause of hail. The forms of hail are very varied, but all hailstones resulting from the same shower generally present considerable uniformity when they fall nearly on the same level. Very frequently small flakes of snow are to be found in the centres of hailstones, and, generally speaking, this is the only dark part in them ; the outer stratum having all the appearance of ordinary ice. Sometimes a small kind of hail occurs, which is scarcely solid, and whose surface appears as if covered with particles of dust, like very fine flour, and it seems, from its general texture, to occupy a sort of intermediate rank between hail and snow.

SIGHTS IN WINTER.

At this season, when the ground is frozen, and the snow lies deep, the timid tenants of the fields often approach the habitations of men. Hares and rabbits venture into gardens, and nibble the culinary vegetables. The tracks of the fox and polecat in the snow prove that these marauders have been roaming all night about the farmer's barns and outhouses. And when the wolf was a denizen of our uncleared woodlands, urged by want, and thus made doubly ferocious, he prowled around the hut of the peasant, and devastated the sheepfold, and the cattle-yard. During the winter, the ravages of this beast were very great: nor was man secure from his attacks.

In former times, a tribute of wolves' heads was received in Wales as an equivalent for taxes, otherwise to be paid in money; and, long after that period, lands were held on condition of hunting these animals. Yorkshire, in the time of Athelstan, so abounded with them, that places of refuge were built for travellers, tracked by sanguinary groups,

“ Burning for blood, bony and gaunt, and grim.”

Happily the wolf no longer disturbs the peasant with his nightly howl; but in some parts of the continent, and especially in the woody regions of the northern

THE POLECAT.

countries, this animal is very common, and every winter commits extensive depredations.

The otter, well known for its destructiveness to fish, quits the small streams, which it haunts, or the lake where it dwells, should they now become frozen, and seeks broader and deeper rivers. Not unfrequently



THE OTTER

it descends to the sea. In some cases, when the means of obtaining fish fail, it has been known to make inland excursions, and visit the farm-yard, attacking pigs and poultry ; but instances of this kind are very rare.

On the other hand, the polecat has been known to pursue the captive fish, when other means of support

SIGHTS IN WINTER.

become scarce. During a severe storm, one of these animals was traced in the snow, from the side of a rivulet to its hole at some distance from it. As it was observed to make frequent trips, and as other marks were seen in the snow, which could not easily be accounted for, a further examination took place. Its hole was examined, the polecat was taken, and eleven fine eels were discovered to be the fruits of its nightly excursions. The marks in the snow were found to have been made by the motions of the eels in the creature's mouth.

In the colder portions of England and the continent, the stoat or ermine assumes that snowy whiteness of fur, except at the end of the tail, which renders it so much esteemed as a lining for winter garments, and for robes of state and royalty. In the southern districts of our country, the ermine seldom becomes entirely white, this colour only appearing in patches, mottling the brown. In Scotland, and the northern parts of our country, specimens of pure white are often met with; and some have been seen in this snowy garb from Ireland. Still, as it regards the fulness, softness, and purity of the colour of the fur, no British species at all equal those obtained in Norway and Siberia; nor, indeed, is the animal so abundant as to be worth

consideration as a matter of commerce. On the contrary, in the northern regions of Europe, the ermine exists in astonishing numbers: the vast forests covering, without interruption, large tracts of country, affording it food and concealment. It is only hunted during the severest months of winter; and a sufficient number remain, after the season is over, to replenish the stock. Still the destruction is immense; for in 1833, the importation of ermine skins into England alone, amounted to 105,139.

The ultimate cause of the change of colour, from a brown or richly-tinted dress, which occurs in so many of the northern mammalia and birds, may be concealment from natural enemies, by the resemblance of hue to that of the snow which covers the face of the country, and also the preservation of the animal heat, which is more completely retained when above the temperature of the surrounding atmosphere, by a white than a dark vestment. The mode, however, by which this change is produced yet remains to be pointed out, and is specially worthy the attention of the reader.

The late Colonel Montagu, whose name stands so high among the practical naturalists of our country, considered both hair and feathers, when completely developed, to have neither circulation, nor a power of

secretion, or absorption. He thus expresses his opinion, which he had formed with care:—"Some species of birds seem to change their winter and summer feathers, at least in part: in some, this is performed by moulting twice a year, as in the ptarmigan; in others, only additional feathers are thrown out; but we have no conception of the feathers changing colour, although we have been informed of such happening in the course of one night."

Dr. Fleming, on the contrary, contends for a change of colouring, and not of hair or feathers, and adduces, in confirmation of his opinion, among other examples, that of an ermine which was shot on the 9th of May, 1814, in a garb intermediate between its summer and winter dress. On all the under parts the white had nearly disappeared, in exchange for the primrose yellow, their ordinary tinge in summer; but the upper parts of the body had not yet acquired their summer colour, which is a deep yellowish brown. There were several white spots, and not a few with a tinge of yellow; and upon examining these white and yellow spots, not a trace of interspersed new short hair could be discerned: this would certainly have been the case if a change of colour was effected by a change of fur. Besides, while some parts of the fur on the back had acquired their

CHANGE IN FEATHERS.

proper colour, even in those parts, numerous hairs could be observed, of a wax yellow; and in all the intermediate stages, from yellowish brown, through yellow to white, proving that the white hairs were regaining their summer hue. Again, in reference to the analogous change in the plumage of the ptarmigan,



THE PTARMIGAN

he observes, that the young birds have their first plumage mottled, chestnut, brown, and black, similarly to that of their parents; but they become white in winter, and again mottled in spring. Now, these young

birds, provided the change of colour is effected by moulting, must therefore produce three coverings of feathers in the course of ten months. This is a waste of vital energy, which no bird, in its natural state, can be supposed to be capable of sustaining, as moulting is the most weakening process they undergo. In birds of full maturity, two moultings must be necessary; one on the approach of winter, and one on the return of spring. It is, however, remarkable, that in these changes the range of colour is from brown, through grey to white, a transition so nearly resembling that which takes place in the fur of the ermine, that Dr. Fleming is disposed to regard the change of colour to be effected in the old feathers, and not by the accession of new plumage in place of the old, the change being independent of the ordinary annual moulting of the birds.

In corroboration of Dr. Fleming's views, the following statement by Sir John Ross may be adduced. It relates to that little animal, the Hudson's Bay lemming, an individual of which lived for several of the winter months in his cabin. "Finding that, unlike what occurred in our tame hares, under similar circumstances, it retained its summer fur, I was induced to try the effect of exposing it, for a short time, to the winter

temperature. It was accordingly placed on deck, in a cage, on the 1st of February; and next morning, after having been exposed to a temperature of thirty degrees below zero, the fur on the cheeks, and a patch on each shoulder, had become perfectly white. On the following day, the patches on each shoulder had extended considerably, and the posterior parts of the body and flanks had turned to a dirty white: during the next four days, the change continued but slowly; and at the end of a week, it was entirely white, with the exception of a dark band across the shoulders prolonged posteriorly down the back, forming a kind of saddle, where the colour of the fur had not changed in the smallest degree. The thermometer continued thirty or forty degrees below zero until the 18th, without producing any further change, when the poor little sufferer perished from the severity of the cold. On examining the skin, it appeared that all the white parts of the fur were longer than the unchanged portions; and that the ends of the fur only were white so far as they exceeded in length the dark-coloured fur; and, by removing these white tips with a pair of scissors, it appeared in its dark summer dress, but slightly changed in colour, and precisely the same length as before the experiment."

Here then, in an animal which does not naturally become white in winter, we find, when cruelly subjected to an extremely low temperature, that the hairs not only lengthen, adding fulness to the fur; but they actually begin to assume a white tint, which, had the animal lived, would doubtless have disappeared on the return of warmer weather.

It may here be observed, that this change is not one dependent on season, but on temperature; for, in mild seasons, and sheltered situations, it does not occur. Two ermines, or stoats, were met with alone in their white dress, in two of the most different winters that occurred for several years. One was the extremely severe one of January to March, 1823; and the other was in the extremely mild one of January, 1832.

In consequence of the great mildness of the months of December, 1831, and January, 1832, an observer was surprised to see a stoat in his winter fur; and the more so, because, three weeks or a month before, he had seen another stoat in his summer coat of brown fur. He was, therefore, led to consider whether the respective situations of the brown and white stoats he had observed this warm winter could alone account for the difference in their colours in any satisfactory manner.

CHANGES IN THE FUR OF ANIMALS.

And what was the result? The situation where the brown stoat was seen is in north latitude fifty-four degrees and nearly thirty-two seconds, and west longitude one degree nineteen seconds nearly, upon a plain elevated a very few feet above the river Tees, in the county of Durham. Again, the place where he met with the ermine, or white stoat, in January, 1832, is in the North Riding of Yorkshire, in north latitude fifty-four degrees twelve seconds nearly; and west longitude one degree thirteen seconds nearly. It is situated upon a very elevated situation, and in the immediate neighbourhood of the lofty moorlands, called the Hambledon hills. These constitute the south-western range of the Cleveland hills, which rise in height from one thousand one hundred to one thousand two hundred feet above the sea.

At the time referred to, the ermine was making its way towards the hills, where no doubt he lived, or where he frequently haunted; and, consequently, the great coldness of the atmosphere, even in so mild a winter, would satisfactorily account for the appearance of the animal in the white fur, although the place is, in a direct line, more than twenty-three miles south of the fields near the Tees, inhabited by the brown stoat in question. If, then, the change alluded to were the

result of a law of season only, and therefore produced by a renewal of fur, it would take place whether in cold or mild winters, in cold or sheltered situations. The opposite, however, appears to be the case: the provision for the comfort of inferior creatures, which we have been considering, is made for them by the God of providence, when they need it; but is only made for them then.

A herring-gull was examined at Christmas by Mr. Yarrell, when he found that several of the tertial wing feathers had their basal halves of a blue grey, the remaining parts being mottled with brown. Two notches were made with scissors in the webs of these feathers, as marks of reference to the two colours then present. Some other feathers were only mottled with brown, and were therefore marked with only one notch. The bird was re-examined in April; the tertial feathers, which when marked were of two colours, were now found to be entirely of a blue grey, the brown having disappeared; one was even tipped with white. The other feathers, which when marked were wholly mottled, were now, for two-thirds of their length, of a pure white, the terminal third alone remaining of a mottled brown.

In another example, namely, the black-tailed godwit,

black markings began on the lowest part of the breast and belly on the 24th of February ; three days afterwards, Mr. Yarrell observed that the feathers on the upper part of the head, neck, and breast, began to change colour from dusky brown to red. On the 29th, he found that the scapularies, the wing coverts, and the tertials had begun also to change their colour. By the 29th of April, the bird had arrived at the full colour of the breeding plumage. That the change going on in this bird since the 24th of February, was absolutely an alteration of colour, and not produced by moulting, is proved by the fact, that he examined the bird day by day ; the change, he states, commenced at the base of each feather, the tip being the last part that altered in colour.

Now, although these, and many other experiments, prove beyond a doubt that feathers do both assume and lose colour ; and that in some birds the change in their livery is to be attributed to this circumstance alone, still it is not pretended that it is exclusively the case in every instance. Various birds, besides a change of colour, acquire ornamental plumes on the approach of the breeding season, which they moult off as soon as that period is over, and with them lose the rich tints which overspread the rest of their plumage.

SIGHTS IN WINTER.

The ruff offers a case in point. In spring the male of this bird assumes a full frill, consisting of lengthened feathers, arising from the neck and throat, while tufts spring one from each side the head, behind the eyes;



THE RUFF

and it is farther remarkable, that in no two individuals is the colour of this ornamental temporary frill alike, nor in the same bird for two successive years. The following instance of this partial moulting, is from a paper of Mr. Yarrell's, who has given particular attention to the subject. "About the 24th of May, the male

of the beautiful mandarin duck commenced moulting off his ornamental breeding plumage ; and by the 3d of July he so much resembled the female, that it was a matter of some difficulty to distinguish them, except by a close inspection. He remained in this state until the 22d of August, when he began to shed the feathers which were to be replaced by others of a more brilliant colour, and on the 25th of September he appeared in his perfect breeding plumage. In this last moulting, the bird did not shed all its feathers, but only those ones which gave place to new ones of a more brilliant colour."

Thus far have we been led, by observing the changes which take place in the fur of the stoat, and variable hare, and in the plumage of the ptarmigan, during the rigours of winter, to enter into the laws on which they are based. They speak of almighty power and wisdom, and prove how, in the minutest, and, as we thoughtlessly call them, the most trifling things, no less than in the most momentous, God is present. But, the trifling and momentous, the minute and the great, are words designating the value of things only in our weak and limited comprehension. The Christian philosopher sees the goodness of God in the feather which clothes the ptarmigan of the mountains, and in its changes ; in the

SIGHTS IN WINTER.

fur of the ermine, and in its marvellous transitions; in the laws of migration and hybernation; and in the appointment of each living creature to its destined mode of life, according to the organs and instruments which God has given. Man's destiny is above the tenants of the earth and waters; but high as he is, and great as are the purposes of God towards him, and well as he may be assured of them, how often does he forget the God of all his mercies, and slight his commands! how often does he shut his eyes from beholding God in creation, in providence, and in grace! Let, then, the objects which he may now contemplate, recall his wandering thoughts, and fix them on Him whose perfections are manifest in them all.

Personifying Winter, Cowper thus addresses him:—

“Thou holdest the sun
A prisoner in the yet undawning east,
Shortening his journey between morn and noon,
And hurrying him, impatient of his stay,
Down to the rosy west; but kindly still
Compensating his loss with added hours
Of social converse, and instructive ease,
And gathering, at short notice, in one group,
The family dispersed, and fixing thought,
Not less dispersed by daylight and its cares.
I crown thee king of intimate delights,
Fire-side enjoyments, home-born happiness,
And all the comforts that the lowly roof
Of undisturbed retirement, and the hours
Of long, uninterrupted evening, know.”

BEAUTIES OF WINTER.

To such circumstances, however, delightful as they are, we must not be restricted. The pleasures of the



evening are to be preceded and followed by the duties of the day. And if we consider it one of them to trace the hand of the Great Father of all, in his various operations, we shall feel constrained to say, with Barton :—

“Thou hast thy beauties : sterner ones, I own,
Than those of thy precursors; yet to thee
Belong the charms of solemn majesty
And naked grandeur. Awful is the tone
Of thy tempestuous nights, when clouds are blown
By hurrying winds across the troubled sky;
Pensive when softer breezes faintly sigh

SIGHTS IN WINTER.

Through leafless boughs, with ivy overgrown.
Thou hast thy decorations too; although
Thou art austere: thy studded mantle, gay
With icy brilliants, which as proudly glow
As erst Golconda's and thy pure array
Of regal ermine, when the drifted snow
Envelopes Nature; till her features seem
Like pale, but lovely ones, seen when we dream."



JANUARY.



“ O Winter, ruler of th’ inverted year,
Thy scatter’d hair with sleet-like ashes fill’d,
Thy breath congeal’d upon thy lips, thy cheeks
Fring’d with a beard made white with other snows
Than those of age, thy forehead wrapp’d in clouds
A leafless branch thy sceptre, and thy throne
A sliding car, indebted to no wheels,
But urg’d by storms along its slipp’ry way,
I love thee, all unlovely as thou seem’st,
And dreaded as thou art!”

COWPER.

THE new year begins its career in winter : sometimes it is ushered in by clouds and storms, and yet we hail its approach. The old year, with its sorrows and joys, its hopes and fears, its gratifications and disappointments, has fled. Its chequered months have passed into eternity, and we stand on the margin of the untried future, over which hangs a dense cloud, receding only in proportion as we advance, so as merely to lay bare the present, while all beyond it is unseen. We know not what a day may bring forth. Let us then use the present, and be thankful that it is ours to employ and improve.

SIGHTS IN WINTER.

How a Christian should use it depends upon the circumstances in which he is placed,—the exigencies and the duties of the hour. But, among all his pursuits, he will not forget his God, or heedlessly pass over the operations of the great Creator, whose Spirit, at the beginning, “moved upon the face of the waters,” and who still sustains all that he made by the word of his power. No! as he looks upwards and around, he will say:—

“These are thy glorious works, Parent of good.
——Thyself how wondrous then!”

It is not uncommon for the close of the year to be comparatively mild, and the early part of the new one to be very inclement. In this case,

“The keener tempests rise; and fuming dun,
From all the livid east, or piercing north,
Thick clouds ascend; in whose capacious womb
A vapoury deluge lies, to snow congealed.
Heavy they roll their fleecy world along,
And the sky saddens with the gathered storm.
Through the hushed air the whitening shower descends,
At first thin wavering; till at last the flakes
Fall broad and wide, and fast dimming the day
With a continual flow. The cherished fields
Put on their winter robe of purest white.
’Tis brightness all; save where the new snow melts
Along the mazy current. Low the woods
Bow their hoar head; and ere the languid sun
Faint from the west emits his evening ray,
Earth’s universal face, deep hid, and chill,
Is one wild dazzling waste, that buries wide
The works of man.”

SEVERE WEATHER.

Other results peculiar to the season follow. Many of these are graphically and correctly exhibited by our



SCENE IN WINTER.

poet Thomson, whose "Winter" will yield much pleasant and instructive reading for the domestic and social circle, while snow is thickly falling, or the

SIGHTS IN WINTER.

wind is howling about their dwelling. Thus he says:—

“ It freezes on,
Till Morn, late rising o'er the drooping world,
Lifts her pale eye unjoyous. Then appears
The various labour of the silent night.
Prone from the dripping eave, and dumb cascade,
Whose idle torrents only seem to roar,
The pendent icicle; the frost-work fair,
Where transient hues and fancied figures rise;
Wide spouted o'er the hill, the frozen brook,
A livid tract, cold-gleaming on the morn;
The forest bent beneath the plummy wave;
And by the frost refined, the whiter snow,
Incrusted hard, and sounding to the tread
Of early shepherd, as he pensive seeks
His pining flock, or from the mountain top,
Pleased with the slippery surface, swift descends.”

Ice is formed in various degrees. Sometimes there is but little, and it is only the careful observer that will find any. Far more commonly there is much, and it is generally so in the northern parts of our country. Now,

“ The loosened ice,
Let down the flood, and half dissolved by day,
Rustles no more; but to the sedgy bank
Fast grows, or gathers round the pointed stone,
A crystal pavement, by the breath of heaven
Cemented firm; till, seized from shore to shore,
The whole imprisoned river growls below.
Loud rings the frozen earth, and hard reflects
A double noise; while, at his evening watch,
The village dog deters the nightly thief;
The heifer lows; the distant waterfall
Swells in the breeze: and, with a hasty tread

ICE.

Of traveller, the hollow-sounding plain
Shakes from afar. The full ethereal round,
Infinite worlds disclosing to the view,
Shines out intensely keen; and, all one cope
Of starry glitter, glows from pole to pole.
From pole to pole the rigid influence falls,
Through the still night, incessant, heavy, strong,
And seizes Nature fast."

All substances, whether liquid or solid, contract when cooling; but in reference to water in such circumstances there is a law which is very different, and very peculiar. Water indeed contracts as the cold increases, but the instant it has cooled down as far as thirty-nine degrees of Fahrenheit, it ceases to do so. Nay, at a still lower temperature it begins again to expand, and continues to do so down to the freezing point. So considerable is the power of expansion, that the strongest metallic vessels, if completely filled with water and closely shut, are seen to burst during the process of freezing. This irresistible power is applied to many important purposes.

A heavier fluid sinks below that which is lighter, as is evident on pouring water on oil. In the same way the heavier particles of water descend into those which are lighter. What takes place on a lake, for instance, at the commencement of the cold of winter? The water on the surface, being in immediate contact with the cold atmosphere, begins to have a lower temperature.

SIGHTS IN WINTER.

It contracts, becomes heavier, and sinks down into the water below, which being warmer and lighter, rises in its turn to the surface. The movement goes on till the water which is uppermost has acquired a temperature of about thirty-nine degrees; still it has a tendency to sink, but this is lost the moment it cools down below that point; for when it begins to expand, it becomes lighter, and swims on the warmer water below. What then is the consequence? Water of a lower temperature than thirty-nine degrees can never reach the bottom of the lake. Deep lakes can never, therefore, be frozen to the bottom. And from this law important results arise.

According to Professor Bischof, to whom we owe much information on the subject, the temperature of the lower regions of the lakes of Switzerland, amounts, at all seasons, to from forty-one to forty-three degrees. The cause of its never being exactly thirty-nine degrees, is ascribed partly to the internal heat of the climate, and partly to the fact, that water of the temperature of thirty-nine degrees never reaches the bottom without being mixed with some of the warmer particles through which it passes. The same temperature is common to all the lakes of the north and south countries of Europe, as the lakes of Sweden, Norway, and Lower Germany,

as well as those of the Alps and Italy. We see, then, why the same species of fish are found in lakes belonging to very different climates. The fish inhabiting the lakes of the north of Sweden swim about in their native element, at the depth where the water is constantly the same temperature. What a beautiful instance is here of providential care !

To no mind short of the Infinite would it ever have occurred to deviate in the contraction of water from the given law relating to the contraction of other bodies. Apart from this it would have contracted as far as the freezing point. In one severe winter, therefore, the waters of this and other countries would have been frozen to the bottom, and the fish, and every other creature in them, would certainly have perished. Now, a totally different state of things appears. A continued frost is requisite to reduce the temperature of deep lakes to thirty-nine degrees. If it operate still longer, a thin layer of water at the surface begins to undergo the process of freezing. The crust of ice that is forming slowly increases downwards, but on the appearance of thaw, its growth is immediately arrested. Under this cover, the fish continue in an active and lively condition, because the region in which they move about, preserves, summer and winter, the same tempera-

SIGHTS IN WINTER.

ture. A few warm days of spring are sufficient to melt the ice, and destroy every trace of winter. The sea has a resemblance to lakes, but the water of the former, owing to its saltness, takes much longer time to freeze than that of the latter.

Ice is lighter than water, not merely to prevent universal ruin and desolation, but also to confer on us signal benefits. The whole coast, extending from Holland to Russia, for instance, is deficient in rocks. Not one is to be seen in that direction. But at an early period, large ice islands were laden with the rocks of Sweden; "they landed," says Professor Bischof, "on the coast of the Baltic, then still under water. They divested themselves of their burden, depositing the stones in localities where they are now found under the name of 'erratic blocks.' They consist chiefly of large pieces of granite porphyry, and are employed for decorating the bridges and museums of Berlin, as also for paving the highways and public roads of Brandenburg. Our countrymen on the Baltic enjoy the possession of these stones merely because ice is lighter than water."

The irresistible power of water when in the act of freezing is also brought into beneficial effect. When man wishes to reduce a mass of rock, he brings gun-

powder into operation. So it was in the explosion of the Round Down Cliff, near Dover,—when it was found necessary to reduce it, to allow of the completion of the South-Eastern Railway,—on which fifteen thousand pounds of gunpowder were expended. But gunpowder is a product of art; there is none in nature. The same result is therefore attained by freezing water. Simple indeed is the means, but the effect is truly amazing. Water falls on the mighty mass, it drops into its crevices, there it freezes; and as expansion takes place, disruption follows. The ice, in severing the rocks, acts like a wedge, to which they never fail to yield. On its beginning to melt, it assists in loosening the rocks and in hastening their destruction. The process is repeated until the stone is completely reduced, and the sterile rock becomes at length a fruitful mould.

Thunder and lightning, frequent in other seasons, are not entirely unknown in winter. Montgomery has connected with their occurrence a moral, when he said :—

“ The flash at midnight !—’twas a light
 That gave the blind a moment’s sight,
 Then sunk in tenfold gloom ;
 Loud, deep, and long, the thunder broke,
 The deaf ear instantly awoke,
 Then closed as in the tomb :
 An angel might have passed my bed,
 Sounded the trump of God, and fled.

SIGHTS IN WINTER.

So life appears :—a sudden birth,
A glance revealing heaven and earth,
It is, and it is not!
So fame the poet's hope deceives,
Who sings for after-times, and leaves,
A name—to be forgot :
Life is a lightning flash of breath,
Fame but a thunder-clap at death."



WINTER LIGHTNING

Winter, often remembered only by its rigours, has, however, its milder beauties, and some which are indeed exceedingly attractive. Go, for instance, to the window some morning, as soon as you rise; if

HOAR-FROST.

you sleep too long, you may miss the sight altogether:

“ And see where it has hung th’ embroider’d banks
With forms so various, that no pow’rs of art,
The pencil or the pen, may trace the scene!
Here glitt’ring turrets rise, upbearing high
(Fantastic misarrangement!) on the roof
Large growth of what may seem the sparkling trees
And shrubs of fairy-land. The crystal drops,
That trickle down the branches, fast congeal’d,
Shoot into pillars of pellucid length,
And prop the pile they but adorn’d before.
Here grotto within grotto safe defies
The sunbeam: there, emboss’d and fretted wild,
The growing wonder takes a thousand shapes
Capricious, in which fancy seeks in vain
The likeness of some object seen before.
Thus Nature works as if to mock at Art,
And in defiance of her rival pow’rs;
By these fortuitous and random strokes
Performing such inimitable feats,
As she with all her rules can never reach.”

Nor let it be supposed, that there is not much well worthy of observation when the trees are leafless, and the hedges bare, and the ground either locked up by frost, or deluged with rain, when the fallow lands look dreary, and the lark has forgotten his song, and the sun, far in the south, scarce rises above the verge of the horizon, and soon finishes his course. “What is there worth looking at?” may be the question of one who goes to the window, then stirs the fire, and, shivering, creeps

SIGHTS IN WINTER.

closer to the blazing embers, glad that he is not obliged to go out on such a bitter day. But what then? Is there no pleasure in the winter's walk? Is there nothing to see, to afford interest and instruction? There is much! Dare the cold; let us go into the fields and lanes, let us stroll by the farm and through the wood, and see if we shall not be repaid for our exertion. Surely, too, we ought to escape the censure of Cowper: "He who can derive no gratification from a view of nature, even under the disadvantage of her most ordinary dress, will have no eyes to admire her in any."

Again, then, we pass the threshold; perhaps,

"The verdure of the plain lies buried deep
Beneath the dazzling deluge; and the bents
And coarser grass, upspearing o'er the rest,
Of late unsightly and unseen, now shine
Conspicuous, and in bright apparel clad,
And fledg'd with icy feathers, nod superb."

Even here is something worth looking at, and especially so, when a glance is all we may have; the beauties of winter, like those of summer, are short-lived. Hoar-frost, for instance, may decorate every branch and twig, and leaf, and blade of grass one moment, and the next be gone. But let us look now on animated nature.

HYBERNATION OF ANIMALS.

“ The cattle mourn in corners where the fence
Screens them, and seem half petrified to sleep
In unrecumbent sadness. There they wait
Their wonted fodder; not like hung’ring man,
Fretful if unsupplied; but silent, meek,
And patient of the slow-pac’d swain’s delay.
He from the stack carves out th’ accustom’d load,
Deep-plunging, and again deep-plunging oft,
His broad keen knife into the solid mass :
Smooth as a wall the upright remnant stands.
With such undeviating and even force
He severs it away : no needless care,
Lest storms should overset the leaning pile
Deciduous, or its own unbalanc’d weight.”

It is very cold ; yet see how well the animals, destined to endure our winter, are enabled to withstand the severity of our season. The coat of the ox is no longer short and smooth, but deep and rough, so that the rain can scarcely penetrate it. It is the same with the horse, except when pampered and stall-fed. The Shetland pony is now as rough and shaggy as any painter who loves the picturesque can desire. The fur of all the wild tenants of our heaths and woods is increased in thickness ; and numberless provisions may be traced for the endurance of winter.

We miss the bat, the hedgehog, the dormouse. They may, however, soon be found ; but in what circumstance ? In quiet slumber—a slumber termed hybernation, during which the blood slowly circulates, the temperature of the body is reduced nearly to that

of the atmosphere, and the vital functions are almost suspended. Is not this just one remove from death? No! It is the Creator's mode of preserving from death. It is a state of insensibility, which the breath of spring will dissolve, at once restoring animation and vigour. Then, if life be spared, we shall see the bat wheel again round the tower, or the trees; the hedgehog interrupt our walks at eventide, and roll itself up at our approach; and the little dormouse will build its little nest in the thicket, when that can afford it concealment.

What a flock of small birds! They are larks, and must amount to thousands! It is the same species, whose song thrills in the blue summer sky, the minstrel appearing but a speck in the vault of heaven. The lark is only gregarious during winter. At the close of the autumn, the birds assemble in flocks, augmented by visitors of the same species from more northern regions; and the assemblage scours the country in search of food, sweeping and wheeling around the turnip-fields and fallow lands, as if to reconnoitre before they settle. Larks in winter are generally fat, and esteemed a delicacy for the table. Hence their wholesale destruction by means of a wide light net, which is thrown over them, while the birds are sleeping at night.

SINGING BIRDS.

Hark ! that is the song of a bird. How sweet and shrill ! It is the wren ; one of the smallest, but also one of the hardiest, of our British birds. It may be seen hopping from twig to twig, and flitting down the hedgerow, unquestionably examining the closely-covered buds, and prying into crevices for dormant insects, and their caterpillars, on which it feeds. Then suddenly it breaks forth into a clear strain, which stops as suddenly as it began.

The wren is not our only winter songster :

“ The redbreast warbles still, but is content
With slender notes, and more than half suppress'd ;
Pleas'd with his solitude, and flitting light
From spray to spray, where'er he rests he shakes
From many a twig the pendent drops of ice,
That twinkle in the wither'd leaves below.”

The robin, whose cheerful note is so familiar to all, is a favourite everywhere, with his rust-red breast, and full black eye. The woodlark also, on a fine day, pours forth his melodious strain. These birds do not congregate like skylarks, during the winter season, in large flocks, but merely associate in small families of five, six, or seven, which separate in the early part of the spring. The hedge-sparrow, or winter fauvette, may also be heard warbling a gentle, yet sweet, and varied song ; the thick hedge concealing the well-known

and plainly-dressed songster. These birds build in hedgerows, gardens, and orchards, before the leaves have yet unfolded.

The golden-crested wren, or gold crest, the most



THE ROBIN.

diminutive of our British birds, braves the severest weather, and may be seen flitting through the coppice and along the hedges, all life and energy. It is a strange circumstance, that in the winter of 1822,

THE BLUE TITMOUSE.

thousands of these birds were seen to arrive on the sea shore and sand-banks of the Northumbrian coast. Many of them were so fatigued, either by the length of their flight, or the state of the wind, as to be unable to rise again from the ground. The flight must have been in prodigious quantities, as its extent was traced through the whole range of the coasts of Northumberland and Durham. There appears little doubt of this having been a migration from the more northern provinces of Europe—probably the pine-forests of Norway and Sweden, from the arrival of these birds being at the same time as that of large flights of the woodcock, fieldfare, and redwing.

What can be more graceful in its actions, or more pleasing in its colour, than the blue titmouse! There it hangs, head downwards, on that tender spray, pecking the buds in search of small caterpillars. In this pursuit, its attitudes are all quick and lively, very elegant, and amusingly varied.—It is gone; another twig is subject to its scrutiny.

There, too, is its relative, the great titmouse; remarkable for its well-contrasted colours, and its active, restless, busy habits. Little care these birds for the coldest weather: they are clad in soft deep plumage, and retire at night into barns, stables, or the holes

and chinks of old walls and trees, for security and comfort.

See, the fields, green with the rising blade, are blackened with rooks, all intent on the destruction of the larvæ of beetles, which they eagerly devour. Thus they benefit the farmer, who need not grieve at the trifling mischief they do, by dislodging some of the roots of the corn, compensated as it is a thousandfold by their services.

The redwing and the fieldfare are winter visitors. Flocks of them are wheeling around the fields; they settle under the hedges, in turnip-fields, or along the borders of coppices. They glean their scanty subsistence from the berries of the hawthorn, the dog-rose, the holly, the ivy, and the mountain ash, adding thereto snails, and the grubs and caterpillars of insects.

What a singular bird flitted by, and plunged into yonder fir-wood! It was a cross-bill. Instances of this curious and interesting bird breeding with us have been met with, though rarely. It is, however, to be regarded as an occasional visitor only. Its habits and manners remind us of the parrot. Like the parrot, though its toes are not two before and two behind, it clings in any posture, with the greatest ease, and is active in the extreme. Its bill consists of two mandibles, arched so

THE CROSS-BILL.

as to cross each other, and that not always on the same side.

The seeds of the fir constitute its principal food, and to obtain them it inserts the points of its bill between



THE CROSS-BILL.

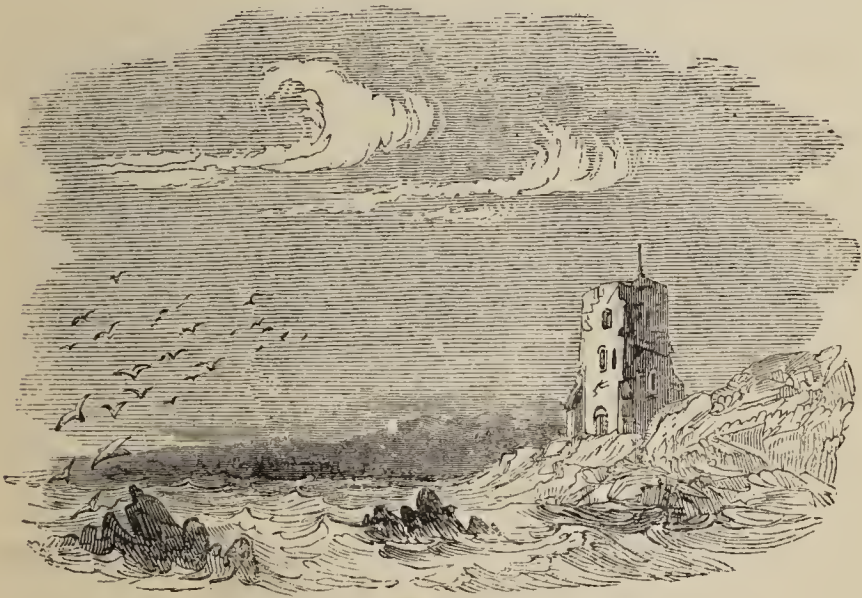
the scales of the fir-cones, and by an adroit lateral movement of the cross mandibles, wrenches open the scale, and disengages the seed, which it seizes at the

same moment. Apple and pear trees sometimes suffer, to a trifling extent, from the depredations of flocks of this bird; but more so on the continent than in our island. It visits us in inconsiderable numbers, except occasionally; for as is the case with many of our visitors, it sometimes makes its appearance in large flocks, and then for several winters it is to be looked for in vain. It is, however, one of our earliest visitors; for it breeds in the pine-forests of Germany, Sweden, and Poland, during the first months of the spring; and it is very remarkable, that, in the year 1821, as Mr. Selby informs us, this island was visited, even as early as the month of June, by immense flocks of these birds, which spread themselves through the country, and were to be seen wherever fir-trees were abundant. The greater part of the flock, as proved by the numbers killed, consisted of old females, and young birds of the year: their course was northward, as they were seen in the fir-tracts of the north of Scotland in September, after they had disappeared from the districts south of the Tweed. The appearance of a cross-bill in January gives us reason to suppose that it will stay and breed with us.

How thronged are the open lands near the sea-shore with various species of the feathered race! Wild fowl of all colours are driven from the inland parts to the

FLOCKS OF BIRDS.

mouth of rivers, and to bays and estuaries of the sea, where they are provided with an unfailing banquet, when the lakes and marshes are locked up with frost. Curlews and whimbrels are sailing on their large and



FLOCKING OF BIRDS TO THE COAST

pointed wings ; gulls are wheeling in easy undulations, and settling and rising, at home on the land, on the water, or in the air. Flocks of lapwings, distinguished by their pied livery, driven from the moorlands and waste parts of the interior to the southern shores, cover the fallow lands, like rooks searching for worms or

larvæ, or approach the marshes along the beach, eager for such food as may there be obtained. But it is in vain to attempt to number the birds which at this season haunt our shores, and draw their sustenance from the prolific waters.

Where are the reptile tribes of our island at this season? Not one is to be seen. No, the beautiful snake is torpid in its retreat; the viper is quiet in its hole; the frog lies buried in the mud of the marsh or pool; and so it is with the water-newt and the toad; and the lizard in his burrow in the brake or coppice. The food on which these reptiles live is not now within their reach, were they even active and vigorous; and their cold blood, never much exceeding that of the atmospheric temperature, loses the requisite stimulus of warmth with the decline of summer. Hence, as if aware of the torpidity to be undergone, as the means of their preservation, they each retire to their appointed dormitory.

How wonderful, how mysterious, that instinct, which the great Creator has imparted! Every creature, according to its structure, and mode of life, habits, and food, is guided and impelled by an irresistible influence. It reasons not, it dreams not of causes or effects; it is not made wiser by experience; it acts as all its species

do, and ever did, and, unconscious of the part it plays in the economy of nature, fulfils its destiny, and contributes to maintain the balance of creation. To man is appointed another line of duties. For him are reserved other springs of motives and actions ; his is a reasoning soul ; and hence, between him and the most sagacious, or apparently sagacious brute, is a wide gulf, which cannot be filled up.

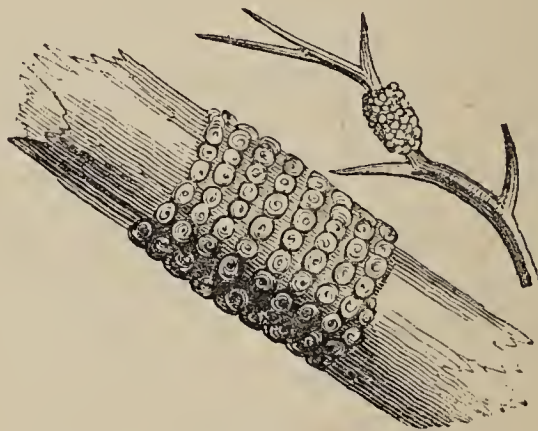
But where are the insects? Many, in a larva state, lie buried in the ground ; many, unhatched in the egg, wait for spring to emerge devouring caterpillars. Many, in the chrysalis state, sleep torpid till the returning warmth shall bid them break forth from their mummy-like envelope, and expand their wings upon the breeze. But some are now alert ; the transient sunshine has roused whole hosts of gnats ; they are dancing as if in the exuberance of pleasure. In a few hours they will all be gone ; each hastening to its concealment ; but to-morrow's sun will call them forth again, should it be a genial winter's day. It may be so, it may even be more than this, for the poet's sketch was not that of fancy, but drawn from nature, when he said :—

The night was winter in his roughest mood ;
The morning, sharp and clear. But now at noon,
Upon the southern side of the slant hills,
And where the woods fence off the northern blast,

SIGHTS IN WINTER.

The season smiles, resigning all its rage,
And has the warmth of May. The vault is blue,
Without a cloud, and white without a speck,
The dazzling splendour of the scene below."

The naked twigs and branches enable us now to look for the eggs of such insects as deposit them in order on the smooth bark, to which they are attached by a sort of glue, which unites them to it securely. Here are the eggs of the lackey moth, and others may



EGGS OF THE LACKEY MOTH

Natural size and magnified size of eggs round a twig of hawthorn.

be found; but here again observe the beautiful operations of instinct. No insect deposits her eggs on any tree but that, the leaves or bark of which is ordained to form the proper food of the caterpillar progeny, when hatched. She makes no mistake, for a mistake would

REAPPEARANCE OF PLANTS.

be fatal to the continuance of her race; and she is not left to choice in such a matter, but is directed by instinct in all she does, and acts without the slightest idea of the future.

Only for a short period can we say:—

“ Where now the vital energy, that moved,
While summer was, the pure and subtle lymph
Through the imperceptible meand’ring veins
Of leaf and flower? It sleeps; and th’ icy touch
Of unprolific winter has impress’d
A cold stagnation on th’ intestine tide.”

Yes; this is all; and soon the “cold stagnation” of the fluids of the plant will entirely cease. The sap is already beginning to circulate in the roots, secured from the cold in the bosom of the genial earth. Stilly, indeed, is the work of restoration, the commencement of the functions of vitality, but it is sure, nay, it has already made great progress, and some of our hardier plants look cheerfully. The catkins of the hazel are beginning to unfold; and the daisy glints forth, scarce reared above the parent earth; the red dead-nettle, the white dead-nettle, the primrose, the grounsel, the chickweed, adorn each sunny bank; the mezereon and hepatica are about to flower, and the snowdrop is already through the ground. The mosses are green and vigorous, and the lichen tints, with its many hues,

SIGHTS IN WINTER.

the old gnarled trunks of trees, and the time-worn stones of ruined towers, over which the ivy, ever verdant, throws a wreath as if to hide the process of decay, or to show that for nature man himself labours, even when he ministers to his own power or glory.

Surely a winter's walk in January is not without interest. Reader, try it for yourself, using your eyes, availing yourself of a pocket microscope, training your ears to catch every sound; and when you return with the glow of health, and the animation which exercise produces, you will not repent that you have left the fireside for a season, to look at nature in "her least attractive dress." One thought, indeed, should fill you with gratitude—for what is the severity of this season in our climate, to the ice-bound regions of the north, where

“ Winter holds his unrejoicing court ;
And through his airy hall the loud misrule
Of driving tempest is for ever heard !
There the grim tyrant meditates his wrath ;
Arms his fierce winds with all-subduing frost ;
Moulds his fierce hail, and treasures up his snows,
With which he now oppresses half the globe. .
There, undissolving from the first of time,
Snows swell on snows amazing to the sky ;
And icy mountains, high on mountains piled,
Seem to the shivering sailor from afar
Shapeless and white, an atmosphere of clouds.
Projected huge and horrid o’er the surge
Alps frown on Alps ; or hideous rushing down,

THE STARRY HEAVENS.

As if old Chaos was again return'd,
Wide rend the deep, and shake the solid pole.
Ocean itself no longer can resist
The binding fury; but, in all its rage
Of tempest taken by the boundless frost,
Is many a fathom to the bottom chain'd,
And bid to roar no more: a bleak expanse,
Shagg'd o'er with wavy rocks, cheerless, and void
Of every life, that from the dreary months
Flies conscious southward."



GREENLANDERS.

Again and again, as the months of winter roll onward, let the eye of the mind be directed to the starry heavens. To this lower world it is not well to confine the thoughts; for as it has been well remarked by

Dr. Duncan—"When a man confines himself to his own little locality, and looks around him on the subject earth, which his plastic hand converts from a wilderness into a garden; or on the lower animals, whom he subdues to his will, and causes, by the supremacy of his mental powers, to supply his wants and administer to his comforts; or even on the waters of the far-spread ocean, whose proud waves he conquers, and over whose trackless deserts he makes his way; or on the free and capacious air, whose fury he controls, and whose blandness he renders subservient to his pleasures or his profit—in such contemplations he may find much to foster self-complacency, and to persuade him that he is in reality that lordly being which pride and vanity delight to portray. But the scenes which astronomy unfolds are altogether of a different tendency, and ought to repress those feelings of self-love which a more partial and contracted view of his situation may excite. The voyager who has compassed the earth, when he returns to his native village, is surprised to find that everything has, in his view, contracted in its dimensions, and become comparatively mean and sordid in its appearance. The houses have shrunk into hovels; the village-green, with a broad spread lawn, has dwindled into a miserable court-yard; miles

have diminished into furlongs; and magnificent estates into sorry farms. This effect has been produced by a contrast with the expansion of his own views: and a similar result arises from the contemplations of the astronomer. Expatiating in the infinity of the universe, the things of earth seem to lessen while he regards them. As he pursues his inquiries, the contrast becomes daily more apparent and more mortifying. He begins to perceive an emptiness in those things which formerly engaged his attention and interested his affections, which he did not previously suspect. He finds himself placed on a little planet, whose comparative insignificance is such, that, were it struck from the face of creation, its fate would but be like that of a falling star, which loses itself in the heavens, and is remembered no more. And, as to himself, what an atom is he! How humbling and appalling is the thought!"

One glorious object meets our views in winter, though his light is denied to others—it is the sun.

"Thou mightiest work of Him
That launch'd thee forth, a golden-crown'd bridegroom,
To hang thy everlasting nuptial lamp
In the exulting heavens. In thee the light,
Creation's eldest born, was tabernacled;
To thee was given to quicken slumbering nature,
And lead the seasons' slow vicissitude
Over the fertile breast of mother earth;
Till men began to stoop their grovelling prayers,

SIGHTS IN WINTER.

From the Almighty Sire of all, to thee.
And I will add, Thou universal emblem,
Hung in the forehead of the all-seen heavens,
Of Him, that with the light of righteousness
Dawn'd on our latter days ; the visitant Dayspring
Of the benighted world. Enduring splendour !
Giant refreshed ! that evermore renewest
Thy flaming strength ; nor ever shalt thou cease,
With time coeval, even till time itself
Hath perished in eternity. Then thou
Shalt own, from thy apparent deity
Debased, thy mortal nature, from the sky
Withering before the all-enlightening Lamb,
Whose radiant throne shall quench all other fires."



FEBRUARY

FEBRUARY.



“ There is at times a solemn gloom,
Ere yet the lovely Spring assume
Sole empire, with the lingering cold,
Content divided sway to hold;
A sort of interreign, which throws
On all around a dull repose ;
Dull, not unpleasing ; when the rest
Nor reign, nor snow, nor winds molest;
Nor aught by listening ear is heard
Save first-fruit notes of vernal bird,
Alone, or with responsive call,
Or sound of tinkling waterfall.
Yet is no radiant brightness seen
To pierce the clouds’ opposing skreen,
Or hazy vapour ; and illume
The thickness of that solemn gloom.
Such is the garb, his natal morn
Ofttimes by February worn :
And such the garment that arrays
Full often his succeeding days.”

MANT.

THE winter is not yet passed ; the rains are not “over and gone ;” yet we cannot but perceive that a change is beginning to manifest itself over the face of nature.

February is usually called a dreary month, a month of clouds, and mist, and heavy rain, when

“Driving sleets deform the day delightless.”

But it is a busy month to the farmer and the gardener; it is also full of interest to the naturalist, and to him who walks through the world with his eyes open. The days have begun sensibly to lengthen; the sun has acquired some power, and now and then breaks forth, lighting up the scene with a gladsome, but transient show of brightness. Let us avail ourselves of the welcome opportunity, and, though the lands are miry and the meadows soaked with water, boldly venture forth. He who would observe nature in all her moods, must take the rough with the smooth, nor shrink from trifling and transient obstacles. Come, then, for why should we delay?

There may, after all, be nothing to endure. February is not always dull or cheerless. And the feeling is delightful when the snows are melted from the fields, and there is a soft spring-like breeze after the prevalence of cold east winds. The sunbeams, too, that break through the driving clouds, and hastily brighten the landscape, are especially welcome. Often do they yield more pleasure than the continued shining of coming seasons. But many cheerless days may come

EARLY FLOWERS.

before them ; the clouds may return after the rain, yet still the heavy showers loosen the soil, enabling the roots to expand, and they supply the fluid which subserves many important purposes.

A few early flowers may probably be observed. The blossoms of the elder and the hazel begin to open, and the leaves of the currant and gooseberry expand. There is the common daisy opening to the sun. It is a favourite with all, and some one has called it "the robin" of flowers. Turn it all ways, and on every side you will find new beauty. The daisy not only shuts its "pinky lashes" at night, but also carefully folds them over its yellow disk when the weather is rainy. So completely is this done, that though acres seem covered with a white sheet when they are open, a shower will restore them in a moment to their former verdure. Here, then, is a power almost peculiar to such plants as inhabit a humid and fickle climate.

And what if there should be around much of dreariness?

"From dearth to plenty, and from death to life,
Is nature's progress, when she lectures man
In heav'nly truth : evincing, as she makes
The grand transition, that she lives and works,
A soul in all things—and that soul is God.
The beauties of the wilderness are his,
That makes so gay the solitary place,
Where no eye sees them. And the fairer forms,

SIGHTS IN WINTER.

That cultivation glories in, are his.
He sets the bright procession on its way,
And marshals all the order of the year;
He marks the bounds, which Winter may not pass,
And blunts his pointed fury: in its case,
Russet and rude, folds up the tender germ,
Uninjur'd, with inimitable art;
And ere one flow'ry season fades and dies,
Designs the blooming wonders of the next."

Mosses invite attention, by the vividness of their colour, and their beauty of structure. In many directions change is visibly going on.

" See that soft green willow springing,
Where the waters gently pass,
Every way her free arms flinging,
O'er the moist and seedy grass.
Long ere winter's blasts are fled,
See her tipt with vernal red,
And her kindly flower displayed,
Ere her leaf can cast a shade.

" Though the rudest hand assail her,
Patiently she droops awhile;
But when storms and breezes hail her,
Wears again her willing smile.
Thus we learn contentment's power,
From the slighted willow bower;
Ready to give thanks and live
On the least that Heaven may give."

Many a shrub and tree will still continue without foliage. Treasured up in their vessels, however, there is a hidden life. They are not, therefore, to be considered as about to perish.

PLANTS FROM OTHER COUNTRIES.

“ For let the months go round ; a few short months
And all shall be restor’d. These naked shoots,
Barren as lances, among which the wind
Makes wintry music, sighing as it goes,
Shall put their graceful foliage on again ;
And more aspiring, and with ampler spread,
Shall boast new charms, and more than they have lost.
Then each, in its peculiar honours clad,
Shall publish even to the distant eye
Its family and tribe.”

And here a fact, often overlooked, is worthy of notice. “ Scarcely one of the plants,” says Mr. Whewell, “ which occupy our fields and gardens is indigenous to the country. The walnut and the peach come to us from Persia ; the apricot from Armenia. From Asia and Syria, we have the cherry-tree, the fig, the pear, the pomegranate, the olive, the plum, and the mulberry. The vine which is now cultivated, is not a native of Europe ; it is found wild on the shores of the Caspian, in Armenia and Caramania. The most useful species of plants—the cereal vegetables—are certainly strangers, though their birth-place seems to be an impenetrable secret. Some have fancied that barley is found wild on



THE POMEGRANATE.

the banks of the Semara, in Tartary; rye, in Crete; wheat, at Baschkiros, in Asia; but this is held by the botanists to be very doubtful. The potato, which has been so widely diffused over the world in modern times, and has added so much to the resources of life in many countries, has been found equally difficult to trace back to its wild condition."

"In our own country," Mr. Whewell also observes, "a higher state of the arts of life is marked by a more ready and extensive adoption of foreign productions. Our fields are covered with herbs from Holland, and roots from Germany; with Flemish farming, and Swedish turnips; our hills with firs of the forests of Norway. The chestnut and the poplar of the south of



THE COTTON.

Europe adorn our lawns; and below them flourish shrubs and flowers, from every clime, in profusion. In the mean time, Arabia improves our horses, China, our pigs, North America, our poultry, Spain, our sheep, and almost every country sends its dog. The products which are ingre-

dients in our luxuries, and which we cannot naturalize

THE EARTHWORM.

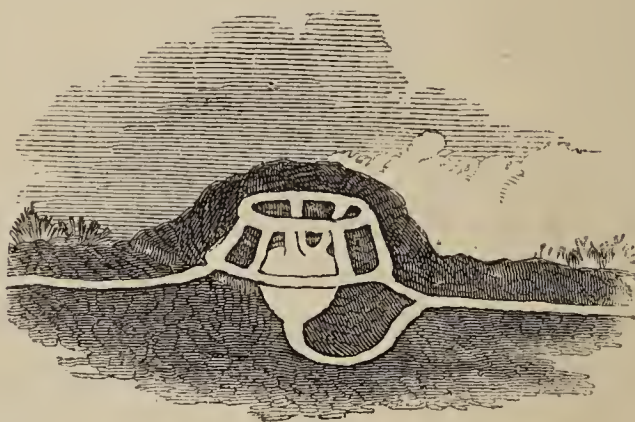
at home, we raise in our colonies; the cotton, coffee, and sugar of the east, are thus transplanted to the farthest west; and man lives in the midst of a rich and varied abundance, which depends on the facility with which plants, and animals, and modes of culture, can be transferred into lands far removed from those in which nature had placed them. And this plenty and variety of material comforts is the companion and mark of advantages and improvements in social life, of progress in art and science, of activity, of thought, of energy of purpose, and of ascendancy of character."

We turn from vegetation to other objects. See how busy the earthworm is on every side! its earth-casts cover the lawn and the meadow. Great is the utility of this animal. Its operations loosen the soil, thus rendering it more porous and able to admit water, so essential to the nutriment of plants. But this is not all: the earthworm absolutely raises the surface of the soil, and that very rapidly. So much is this the case, that stones and other objects which cumber the ground become in a few months, or if large, years, buried beneath an accumulation of rich mould, the rejected nutriment of myriads of these beings, the effect of whose agency is to level and smooth, and fit the soil for

SIGHTS IN WINTER.

herbage. Worms, then, are pasture-makers. It is by their means that a stony, sterile field becomes an uniformly grass-covered mead; that the stones disappear beneath the turf, and that a light and porous surface is perpetually maintained. In the multitudes of these creatures we see the wisdom of the Almighty, who has destined them, feeble as they are, for the promotion, in a remote sense, of man's interest.

But the worm has its enemies; and one is now most



MOLE-HILL AND GALLERIES.

busily at work—it is the mole. See how many fresh mole-hills cover the meadow—last night's work—for the mole is a nocturnal miner. An eminent naturalist, Mr. Bell, observes, that the labours of the mole are not confined to the galleries, and passages, and vaults, which

it excavates, “but in lands newly sown, the surface of which is consequently light and yielding, after moderate rain, which has brought the earthworms to the surface, the mole follows them, and pursues its chase along the superficial layer of the soil, digging a shallow continuous trench, in which work it advances with great rapidity.” These shallow trenches being only just beneath the surface, their course may be often traced by a slight elevation, the animal having arched up the roof of the winding gallery by the pressure of its own body, as it forced its way through the yielding soil. “The district or domain to which a single mole confines himself may be termed its encampment. Within its limits, or, at least, in immediate communication with this district, all the labours of this animal are confined. It consists of a habitation or fortress, from which extends the high road by which the animal reaches the opposite extremity of the encampment; and of various galleries or excavations, opening into this road, which it is continually extending in search of food, and which, in fact, constitutes its hunting ground.” The fortress is formed under a large raised hillock.

Moles seldom intrude on each other's hunting ground; but should two meet in the same excavation, one must retreat, or a fierce battle ensues, which proves fatal to

the weaker of the two combatants. In the mole, the appetite of hunger amounts to frenzy, and hence, with the exception of about six hours' rest in the middle of the day, it is incessantly on the chase. Worms constitute its staple food, which it pursues during the frosts of winter to their deepest retreats ; nevertheless, it also eats the larvæ of insects, and even mice, birds, lizards, and frogs. But does the question arise, Is it not in danger of being drowned during the floods of February, and indeed of other months ? Not at all ; in addition to its excellences as a miner, it is an admirable swimmer ; and for the act of swimming its hands and feet are as well adapted as for excavating. " Surprised in its encampment," says the writer referred to, " by the floods, it seeks its safety by this means : and a friend of mine, residing at Waltham Abbey, assures me, that he has seen moles swimming very featly when the marshes of that neighbourhood have been inundated." But it is not only when it is driven to it, as a means of escape from danger, that it employs this means of travelling. It will not hesitate to cross a brook, or even a broad river, to change its hunting ground, or to emigrate from a district which has ceased to afford it sufficient nourishment ; and occasionally it would appear to take the water merely for the purpose of enjoying the luxury

THE SQUIRREL.

of a bath. The mole has his enemies, and man amongst the number. The mole-catcher has already begun to set his traps.

Let us pass through the wood. The squirrel is very busy and alert; how nimbly he ascends the trunk of that fine beech tree! how soon he is hidden among the topmost branches! Truly is it said:—

“He lives the long summer through,
Without a care or a thought of sorrow.
But small as he is, he knows he may want,
In the bleak winter weather when food is scant;
So he finds a hole in an old tree’s core,
And there makes his nest, and lays up his store;
Then, when the cold winter comes and the trees are bare,
When the white snows are falling and keen is the air,
He heeds it not, as he sits by himself,
In his warm little nest, with his nuts on his shelf.
O wise little squirrel! no wonder that he
In the green summer woods is as blithe as can be.”

And now, most probably, he has been on a visit to his store of nuts, acorns, and beech-mast, for a meal. The squirrel does not pass the winter in a state of hybernation, but, clad in warm fur, braves its severity. Instinct-directed, he accumulates various little magazines of food, snugly hidden, lest the thievish jay should discover, and pilfer his treasure. At this season they are his great, if not entire source of dependence; and who that finds in some chink, or cranny, the store, so to

speak, thus wisely accumulated, would scatter it, and rob the Ariel of the woods of his just possession?

The hybernating animals are beginning to bestir themselves. The dormouse is roused by the fitful sunshine, to peep forth and take a little food ; for though it passes the severer months in a state of torpidity, it awakens when a warmer day than usual intervenes. During the present month, a sunshiny day is almost sure to call it from its dormitory ; but it will return to its repose when the sun begins to decline, and the air becomes again chilly and depressing. The hedgehog, however, sleeps more soundly, and will not yet appear ; rolled up in a compact ball, and invested with moss and leaves, beneath the covert of some brake, or under the roots of some old hollow tree, it waits for the warmer months to call forth the “creeping things” on which it feeds, before its profound trance will pass away. The hedgehog stores up no provision ; indeed it cannot, from the very nature of its food, which consists of slugs, snails, insects, and lizards. Were it to awake, it would awake to famish ; there are, therefore, wisdom and mercy in the law which ordains its hybernation.

Strange to say, the common bat occasionally appears on the wing even during the present month, and still more frequently during March. This species is the

latest and earliest on the wing of the British bats; it has been seen alert and flying even as late as December: a warm sunshiny day is sure to rouse it. Its food consists of gnats, which the same warm sunshine also calls forth; and thus it awakens to food prepared for its reception. The final retirement of this species of bat "does not depend," says Mr. Bell, "exclusively upon temperature; for although before the severe frosts set in, they continue to fly even when it is below the freezing point, they do not again appear until the time above mentioned, March, notwithstanding the thermometer may have often risen above fifty degrees of Fahrenheit. This peculiarity is easy of solution. The fondness of the animal for different species of gnats has been observed, even from the earliest period; and from the diminutive size of the common bat, it is probable that these little insects constitute its principal food. These, and many other insects, after having disappeared during the ungenial fogs and rains of the close of the autumn, often make their appearance again in smaller numbers, on every fine warm day, until the severe cold of the depth of winter finally destroys the greater part of them. The same impulse of hunger equally accounts for the appearance of the common bat in the daytime, at this

period of the year ; as it is only at that time that the temperature is sufficiently elevated to summon into temporary activity its insect food."

The feathered tribes are now in activity ; the raven is preparing its nest, and so is the crow ; and the rook is not behind them. How full of bustle and animation is the rookery ! Some are bringing sticks and twigs with which to prepare their nests, which, thus patched up, form the cradle for many a successive generation. Some are contending for the possession of a nest, to which two parties lay claim ;—we suspect the law of might is the law of right with them. Some, too, are absolutely robbing their neighbours, despoiling their nests, for the sake of furnishing their own with little pain and labour. A rookery is a picture of human society, and presents, at this season, a scene of turmoil, squabbling, and misrule. In a little time, the various litigations among the contending parties will subside. "Rooks," says Gilbert White, "are continually fighting, and pulling each other's nests to pieces : these proceedings are inconsistent with living in such close community ; and yet, if a pair offer to build on a single tree, the nest is plundered, and demolished at once. Some unhappy pairs are not suffered to finish their nests till the rest have completed their building. As

THE THRUSH.

soon as they get a few sticks together, a party comes and demolishes the whole. As soon as rooks have finished their nests, the males begin to feed the females, and this is continued through the whole season of incubation."



THE THRUSH.

The thrush is loud in song—clear, bold, and varied are his notes ; nor is the blackbird silent. Listen to

those two sharp notes, reiterated with harsh emphasis ; there flits the bird that uttered them, among the willows by the brook ; it is the marsh titmouse, one of our early breeders. It builds in the holes of pollard willows, and the stumps of trees, near its favourite haunts ; its nest is made of moss, and the fine soft down that clothes the seeds of the willow. During the winter, this active little bird associates with others of its species in small families ; these are now breaking up, for the pairing season is at hand.

There stands the heron in the flooded brook, immoveable, with its neck bent and drawn in between its shoulders ; its beak ready to strike, and its eye intent upon the water, watching for some unwary fish that may come within its reach. Our approach has disturbed it ; away it sails on its ample wings, to some more sequestered spot. During the winter, these birds roam far and wide in search of open water ; but at the latter end of this month, the scattered flock draws gradually towards its heronry ; and numbers may be seen collected together, as if on a consultation, previous to the great business of the spring. In some respects, a heronry resembles a rookery ; these birds build in company together on the highest trees ; their nests are made of sticks lined with wool, or other soft materials,

THE HERON.

and are large and flat, and often in contact with each other on the same branch, or tree.

Our winter birds of passage are now beginning to move northwards; flocks of wild-geese may be seen high in the heavens; and many of the birds which were driven from the inland parts to the coast, are beginning to return. Nevertheless, if severe weather comes on, they retrace their way. The severe February of 1838 was rendered remarkable, from the number of wild-swans by which various parts of this kingdom were visited. In the Magazine of Natural History, is the following communication from a correspondent at Blackburn, Lancashire: “The present dreadfully severe weather has driven to the estuary of, and even high up, the river Ribble, a flock of wild swans, originally twenty-seven in number. The capture of four of these has come within my own observation; the first was shot upwards of twenty miles from the mouth of the river, on February 7. The second was shot near Walton-le-Dale, about two miles up the Ribble, above Preston; this being shot by a farmer—the Goth actually had it plucked and roasted! The third was shot near Clitheroe, still higher up the river. The fourth bird came into my possession, February 17, having been killed near the embouchure of the river two days

SIGHTS IN WINTER.

before.” During the same month, many specimens of wild swans were shot on the Thames, and in the neighbourhood of London. It is remarkable, that in the same month, the year before, after a severe storm of wind, a stormy petrel was picked up on Preston-moor alive, but completely exhausted; it survived its capture two days, and would most probably have recovered, but was killed for the purpose of mounting. The occurrence of this oceanic bird inland is very rare: but sea-gulls are often driven by the winds to a considerable distance from the shore.

Many of our native birds pair this month, besides those already noticed; as the thrush, the missel thrush, the red grouse, the partridge, the domestic pigeon; and towards its close, the yellow hammer, the goldfinch, and the ringdove, the largest of the European wild pigeons.

During the present month, many of the reptile tribes will awake from their repose to activity. The viper crawls forth to enjoy the sunshine. The ditches resound with the hoarse deep croak of the frog, and the masses of eggs, or spawn, which the female deposits, may be observed in great abundance. From these eggs spring a tadpole progeny; a truly aquatic race, with organs of respiration, adapted to the fluid in which

they as yet exclusively live, and with a rudder-like tail, their only organ of progressive motion. In a few weeks, however, the limbs will begin to be developed, the breathing vessels that were observed will disappear, the lungs will expand, the tail vanish, and the metamorphosis will end by these little creatures abandoning the water, and betaking themselves to the moist meadows and fields, in quest of food.

See yonder an insect on the wing! It is the brimstone butterfly, which precedes its race, and may be regarded as their harbinger. Here, too, is a film of gossamer, a proof that some of the spiders are already beginning to throw out their floating lines,—silken streamers.

Vegetation has already made rapid advances, and several plants and shrubs are in blossom. Of these we may count the barren strawberry, the butcher's broom, the coltsfoot, the daffodil, the sweet violet, and the snowdrop. The filbert and the willow, too, hang out their flowers; and the yew puts on a greener tint, and appears in blossom.

“What prodigies can power Divine perform,
More grand than it produces year by year,
And all in sight of inattentive man?
Familiar with the effect, we slight the cause,
And in the constancy of nature's course,
The regular return of genial months,

SIGHTS IN WINTER.

And renovation of a faded world,
See nought to wonder at. Should God again,
As once in Gibeon, interrupt the race
Of the undeviating and punctual sun,
How would the world admire! But speaks it less
An agency divine, to make him know
His moment when to sink and when to rise,
Age after age, than to arrest his course?
All we behold is miracle; but, seen
So duly, all is miracle in vain.

It has been well remarked by Mr. Whewell, that “the processes of the rising of the sap, of the formation of proper juices, of the unfolding of leaves, the opening of flowers, the fecundation of the fruit, the ripening of the seed, its proper deposition in order for the production of a new plant,—all these operations require a certain portion of time, which could not be compressed into less space than that of a year, or, at least, could not be abbreviated in any great degree. And on the other hand, if the winter were greatly longer than it is now, many seeds would not germinate at the return of spring.”

“Now, such an adjustment,” adds this author, “must surely be accepted as a proof of design exercised in the formation of the world. Why should the solar year be so long, and no longer? or this being of such a length, why should the vegetable cycle be exactly of the same length? Can this be chance? And this occurs, be it observed, not in one, or in a few species of

plants, but in thousands. Take a small portion only of known species, as the most obviously endowed with this adjustment, and say ten thousand. How should all these organized bodies be constructed for the same period of the year? How should all these machines be wound up so as to go for the same time? Even allowing that they could bear a year or a month longer or shorter, how do they all come within such limits? No chance could produce such a result; and if not by chance, how otherwise could such a coincidence occur, than by an intentional adjustment of these two things to one another—by a selection of such an organization in plants, as would fit them to the earth on which they were to grow—by an adaptation of construction to conditions; of the scale of the construction to the scale of conditions?”

The concluding paragraph of the chapter from which the preceding quotation is made, carries the view of adjustment between organized existence and the annual cycle still farther; a part of which is as follows:—“The same kind of argument might be applied to the animal creation. The pairing, nesting, hatching, fledging, and flight of birds, for instance, occupy each its peculiar time of the year, and, together with a proper period of rest, fill up the twelve months.”

SIGHTS IN WINTER.

Here, then, we pause in our account of February. But when warmer months come on, and vegetation is fully developed, and the stagnant waters are replete with life, and when myriads of insects are on the wing, some strange and wonderful forms may be seen by the microscope, which, although too minute to be seen by the naked eye, display no less impressively the power of God in creation, than the mighty elephant, or the colossal whale ; structures of infinite beauty, proclaiming design and purpose, as clearly as does the hand of man, or the constitution of the human frame.

On a review of the year, one truth is apparent :—

“ Our God is love ! repeats the youthful spring,
Our God is love ! the summer days proclaim,
Our God is love ! the autumnal valleys sing,
And winter sweetly echoes to His name.”

On the benevolence of Jehovah we have not failed to dwell as we have passed through the successive seasons. Nor have we overlooked that love, which shines forth with unspeakably greater brightness in the work of redemption than in all beside. It is of great importance to store the mind with useful knowledge, but still more so is it that there should be a deep and abiding sense of our state by nature and practice as sinners. This alone will urge it to seek an interest

BENEVOLENCE OF GOD.

in the atoning blood and perfect righteousness of our Lord Jesus Christ. Until this is done, there will be the winter of the soul; it will be under the bondage of spiritual death; and in this there will be the presage, if mercy prevent not, of death eternal. Reader, take heed that this be not your present, your final condition. Inconceivably bitter is that lamentation, "The harvest is past, the summer is ended, and we are not saved" (Jer. viii. 20). If you have hitherto delayed to apply to the Saviour, go to Him *now*. "Him that cometh to me," is His own gracious declaration, "I will in no wise cast out." Repent, then, and put away your sins. Believe, and be saved. Let the humble and fervent petition arise before the throne of grace for pardon and holiness, and it shall be heard and answered.

How much delight is there to be experienced by him, who, reconciled to God through the death of his Son, gazes on the world which Christ upholds by the word of his power! "Let me suppose," says Dr. Chalmers, "that the evidence of the Christian revelation is sustained; and that the same mind which is familiarized to all the sublimities of natural science, and has been in the habit of contemplating God in association with all the magnificence which is around him, shall be brought to submit its thoughts to the captivity of the doctrine

SIGHTS IN WINTER.

of Christ. Oh! with what veneration, and gratitude, and wonder, should he look on the descent of Him into this lower world, who made all things, and without whom, ‘was not anything made that was made.’ What a grandeur does it throw over every step, in the redemption of a fallen world, to think of its being done by Him who unrobed himself of the glories of so wide a monarchy, and came to this humblest of its provinces, in the disguise of a servant, and took upon himself the form of our degraded species, and let himself down to sorrows, and to sufferings, and to death for us! In this love of a dying Saviour to those for whom in agony he poured out his soul, there is a height, and a depth, and a length, and a breadth more than I can comprehend; and let me never, never, from this moment, neglect so great a salvation, or loose my hold of an atonement made sure by him who cried that it was finished, and brought in an everlasting righteousness.”





